The Journal of the American Osteopathic Association

OCTOBER 1959 • VOLUME 59

Convention keynote address

Panel on the medical audit

Table of contents on page A-2

with **BUFFERIN® IN ARTHRITIS**

salicylate benefits with minimal salicylate drawbacks

Rapid and prolonged relief—with less intolerance.

The analgesic and specific anti-inflammatory action of BUFFERIN helps reduce pain and joint edema—comfortably. BUFFERIN caused no gastric distress in 70 per cent of hospitalized arthritics with proved intolerance to aspirin. (Arthritics are at least 3 to 10 times as intolerant to straight aspirin as the general population.[1])

No sodium accumulation. Because BUFFERIN is sodium free, massive dosage for prolonged periods will not cause sodium accumulation or edema, even in cardiovascular cases.

Each *sodium-free* BUFFERIN tablet contains acetylsalicylic acid, 5 grains, and the antacids magnesium carbonate and aluminum glycinate.

Reference: 1. J.A.M.A. 158:386 (June 4) 1955.

ANOTHER FINE PRODUCT OF BRISTOL-MYERS

Bristol-Myers Company, 19 West 50 Street, New York 20, N. Y.

after the coronary

Peritrate improves blood flow ...with no significant drop in blood pressure

Peritrate aids in the establishment of vital collateral circulation in the postcoronary patient.

Unlike nitroglycerin, Peritrate is a **selective** vasodilator that works almost exclusively on coronary vessels with only minimal peripheral effects. It increases coronary blood supply without significant fall in blood pressure or increase in pulse rate. Prescribe Peritrate 20 mg. q.i.d. for your postcoronary patients.

WARNER CHILCOTT
MORRIS PLAINS, N.J.

Peritrate® 20 mg.

brand of pentaerythritol tetranitrate

With the aid of Peritrate, compensatory collateral circulation develops around damaged myocardium.

The Journal of the American Osteopathic Association

October 1959, Volume 59, Number 2

77 The function of the osteopathic profession: A matter for decision. *Irvin M. Korr, Ph.D., Kirksville, Missouri*

91 Splenic vein obstruction in carcinoma of the tail of the pancreas as demonstrated by percutaneous splenoportal venography. *Robert R. Rosenbaum, D.O., and Milton Metzman, D.O., Philadelphia*

95 Rationale and indications for digitalization of the surgical patient. *Lennert L. Lorentson, D.O., Detroit*

99 Injuries involving the elbow. *Daniel T. Fridena, Jr., D.O., Phoenix, Arizona*

106 Medical audit. A panel discussion

120 Cancer research. *Carl G. Baker, M.D., Bethesda, Maryland*

124 Cardiac arrest and resuscitation. Then what? *Lawrence Everett Giffen, D.O., Jefferson City, Missouri*

127 Editorials

130 Activities of the American Osteopathic Association

149 New Products

158 Current Literature

160 Book Reviews

A-139 Conventions and Meetings

A-144 State and National Boards

A-216 Books Received

A-218 Changes of Address and New Locations

A-224 Applications for Membership

INFORMATION FOR CONTRIBUTORS

THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION is the official scientific publication of the American Osteopathic Association. Articles are accepted with the understanding that they have not been published or accepted for publication elsewhere.

Manuscripts

1. Manuscripts should be typed in triplicate, the original and carbon sent to THE JOURNAL, and one carbon kept by the author. All copy, including quotations, footnotes, tables, references, and legends for figures, should be double-spaced, with ample margins.

2. References are required for all material derived from the work of others, whether or not author's names are mentioned. Reference numbers should be assigned in order of reference in the article. Each reference must include the name of the author and the full title of the article or book. For periodicals, the name, volume number, complete date, and inclusive paging of the article are required. For books, the edition, the name and location of the publisher, and the year of publication are required. Exact page numbers must be given for all direct quotations.

3. The author's degrees and teaching affiliations should be given.

4. The article should end with a comprehensive summary.

Illustrations

1. Photographs should be unmounted, untrimmed, glossy prints.

2. Figure charts, tables which are to be engraved, and lettering on prints should be in black (India) ink on good quality white paper. Lettering must be large enough to be read when reduced.

3. Original roentgenograms or slides can be used for reproduction, but direct-contact glossy prints from originals are preferable.

4. All illustrations must be numbered and the top indicated.

5. Good illustrations enhance the value of articles, and contributors are encouraged to submit illustrative material with manuscripts.

6. When illustrations which have appeared elsewhere are submitted, full information should be given about previous publication, whether or not permission has been obtained, and credit to be given.

Copies of the Journal

1. Three copies of THE JOURNAL containing his article will be sent to the author on request.

Reprints

1. Information for ordering reprints is sent with galley proofs.

FOR ADDITIONAL INFORMATION, PLEASE WRITE THE EDITOR

Published monthly by the American Osteopathic Association. Printed by Pioneer Publishing Company, Publication Office, 100 S. Kenilworth Ave., Oak Park, Ill. Editorial and Executive Offices, 212 E. Ohio St., Chicago 11, Ill. Subscription $10 a year; single copies $1.00. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 31, 1922. Entered at Oak Park, Ill., Post Office as second class matter April 1, 1926, under the Act of March 3, 1879.

ALL CORRESPONDENCE SHOULD BE ADDRESSED TO 212 E. OHIO ST., CHICAGO 11, ILL. CHANGE OF ADDRESS: If possible, clip address from mailing envelope of your copy of this magazine and send along with new address (with zone number if any). Allow 5 weeks for change-over.

Copyright, 1959, by American Osteopathic Association.

now the oral route to ringworm control

orally effective antifungal antibiotic

First fungistatic agent to permeate keratin from the inside—oral FULVICIN is absorbed systemically and deposited into dermis, hair and nails—checks growth of invading fungi until new, healthy tissue grows out.

Effectiveness[1-5]—rapid clearing of ringworm due to *Microsporum, Trichophyton* and *Epidermophyton* organisms—regardless of previous duration, tineas of scalp, hair, body and feet often improve and clear in 2 to 3 weeks, onychomycosis usually in 3 to 4 months...rapid relief of itching, loss of hyperkeratosis.

Safety[1-5]—very low toxicity in therapeutic doses ...the few side effects reported (gastric discomfort, diarrhea and headache) are mild and self-limited.

Packaging: FULVICIN® is supplied as 250 mg. scored tablets, bottles of 30, 100.

Bibliography: (1) Williams, D. I.; Marten, R. H., and Sarkany, I.: Lancet *2*:1212, 1958. (2) Blank, H., and Roth, F. J., Jr.: A.M.A. Arch. Dermat. *79*:259, 1959. (3) Goldfarb, N., and Rosenthal, S. A.: Current M. Digest *26*:67, 1959. (4) Reiss, F.: Medical Circle Bulletin *6*:9, 1959. (5) Robinson, H. M., Jr.; Robinson, R. C. V.; Bereston, E. S.; Manchey, L. L., and Bell, F. K.: Griseofulvin, Clinical and Experimental Studies, presented at Am. Dermat. Assoc. Meet., Atlantic City, N. J., June 3, 1959.

SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY

®T.M. 8-246

From
SAUNDERS

4 NEW BOOKS

Valuable to the Osteopathic Physician

Moore—
METABOLIC CARE OF THE SURGICAL PATIENT

You can give your patient the best chance for natural convalescence after surgery with the help of the remedial and supportive metabolic measures outlined in this book. Dr. Moore has been engaged for the past 15 years in the practice and teaching of surgery; and in the investigation of surgical metabolism. He beautifully merges the clinical and investigative approaches to surgical aftercare in this valuable new book. You'll find sound advice on most of the metabolic situations seen in general surgery as well as some of those met in urology, orthopedics and neurosurgery. Case histories give you clear pictures of bedside management of anemia, starvation, shock, etc.

By FRANCIS D. MOORE, M.D., Moseley Professor of Surgery, Harvard University Medical School; Surgeon in Chief, Peter Bent Brigham Hospital. 1011 pages, 7⅞" x 10¾", with 142 illustrations. About $20.00.
New—Just Ready!

Kaplan—DUCHENNE'S PHYSIOLOGY OF MOTION

This classic work, unavailable in English for a number of years, is now restored to print. A beautifully clear translation by Dr. Emanuel B. Kaplan incorporates modern nomenclature throughout. Even though the book was first written over 75 years ago, it still gives the modern reader an insight into basic orthopedic principles. These principles remain fresh and vital today, even in the light of advanced knowledge. Dr. Duchenne considers minutely the individual action and activity of muscles which move the shoulder, arm, forearm, fingers, thumb, thigh, leg, foot and toes. The motion of respiration and of the vertebrocranial column is covered in detail. A special section gives valuable details of muscles and motion of the face.

By Dr. G. B. DUCHENNE (of Boulogne). Translated and edited by EMANUEL KAPLAN, M.D., Attending Orthopedic Surgeon, Hospital for Joint Diseases; Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia Univerity. 612 pages, 6" x 9", with 101 illustrations. $11.00.
New!

Potts—
THE SURGEON & THE CHILD

Here is remarkably perceptive advice on providing adequate care at the proper time for the deformed or surgically ill child. Dr. Potts' unusual book is packed with hundreds of hints and bits of advice on: how to approach the child, how to gain his confidence, how to examine him thoroughly, yet painlessly, what to look for in the way of facial expression, color, etc. In addition you'll find the more formalized approaches to diagnosis, differential diagnosis and treatment. Some of the many conditions discussed include: respiratory problems of the newborn — umbilical hernia — tetralogy of Fallot — pyloric stenosis — malrotation of the bowel — undescended testicle — intussusception — etc.

By WILLIS J. POTTS, M.D., Surgeon in Chief, Children's Memorial Hospital; Professor of Pediatric Surgery, Northwestern University Medical School, Chicago. 225 pages, 6" x 9¼", illustrated. $7.50.
New!

Schwartz—
DISORDERS OF THE TEMPOROMANDIBULAR JOINT

If you ever see temporomandibular joint disorders you can profitably use this beautifully illustrated new book. It offers a complete and up-to-date source of clinical information on all aspects of these problems. Dr. Schwartz and 18 contributors skillfully cover diagnostic methods — including differential diagnosis. Treatment measures are fully delineated. You are shown how these measures are applied to specific disorders such as limitation of movement—clicking — dislocation and subluxation — rheumatic disease—condylar fractures—osteoarthritis, etc. Full chapters cover such valuable adjuncts to diagnosis as radiography and electromyography.

By LASZLO SCHWARTZ, D.D.S., Clinical Professor of Dentistry, Columbia University; Director, Temporomandibular Joint Clinic, Columbia-Presbyterian Medical Center. With 18 Collaborators. 471 pages. 7" x 10", with 168 illustrations. $15.00.
New!

W. B. SAUNDERS COMPANY
West Washington Square, Philadelphia 5, Pa.

JAOA-10-59

ORDER FORM

Please send and charge my account:

☐ Moore—*Met. Cure of Surg. Patient*.....About $20.00
☐ Kaplan—*Duchenne's Phys. of Motion*.....$11.00
☐ Potts—*Surg. & Child.* .....$ 7.50
☐ Schwartz—*TMJ Dis.* $15.00

Name.....

Address.....Zone .....State.....

In Biliary Distress

ZANCHOL®

Improves Flow and Color of Bile

Zanchol (brand of florantyrone), a distinct chemical entity unrelated to the bile salts, provides the medical profession with a new and potent hydrocholeretic for treating disorders of the biliary tract.

The high degree of therapeutic activity of this new compound and its negligible side reactions yield distinct clinical advantages.

- Zanchol produces a bile low in sediment.
- Zanchol enhances the abstergent quality of bile.
- Zanchol produces a deep, brilliant green bile, regardless of its original color, suggesting improved hepatic function.
- Zanchol improves the flow and quantity of bile without increasing total bile solids.

Bile with these qualities minimizes biliary stasis, reduces sediment and debris in the bile ducts and discourages the ascent of infection.

For these reasons ZANCHOL has shown itself to be a highly valuable agent in chronic cholecystitis, cholangitis and care of patients following cholecystectomy.

Administration: One tablet three or four times a day. Zanchol is supplied in tablets of 250 mg. each. G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

SEARLE

NEW!
FOR THE
PREMATURE
BABY

DAVOL PREEMIE NIPPLE

FOR
WIDE-NECK
NURSERS

#153X

The *new* Preemie Nipple, made of *soft, pliable* pure gum, enables baby to feed comfortably and satisfactorily. Special air vent reduces air swallowing, nipple collapse. Smooth inside surface is easy to clean. Its distinctive shape and color provide for easy identification and quick sorting by hospital personnel.

FOR NARROW-NECK NURSERS

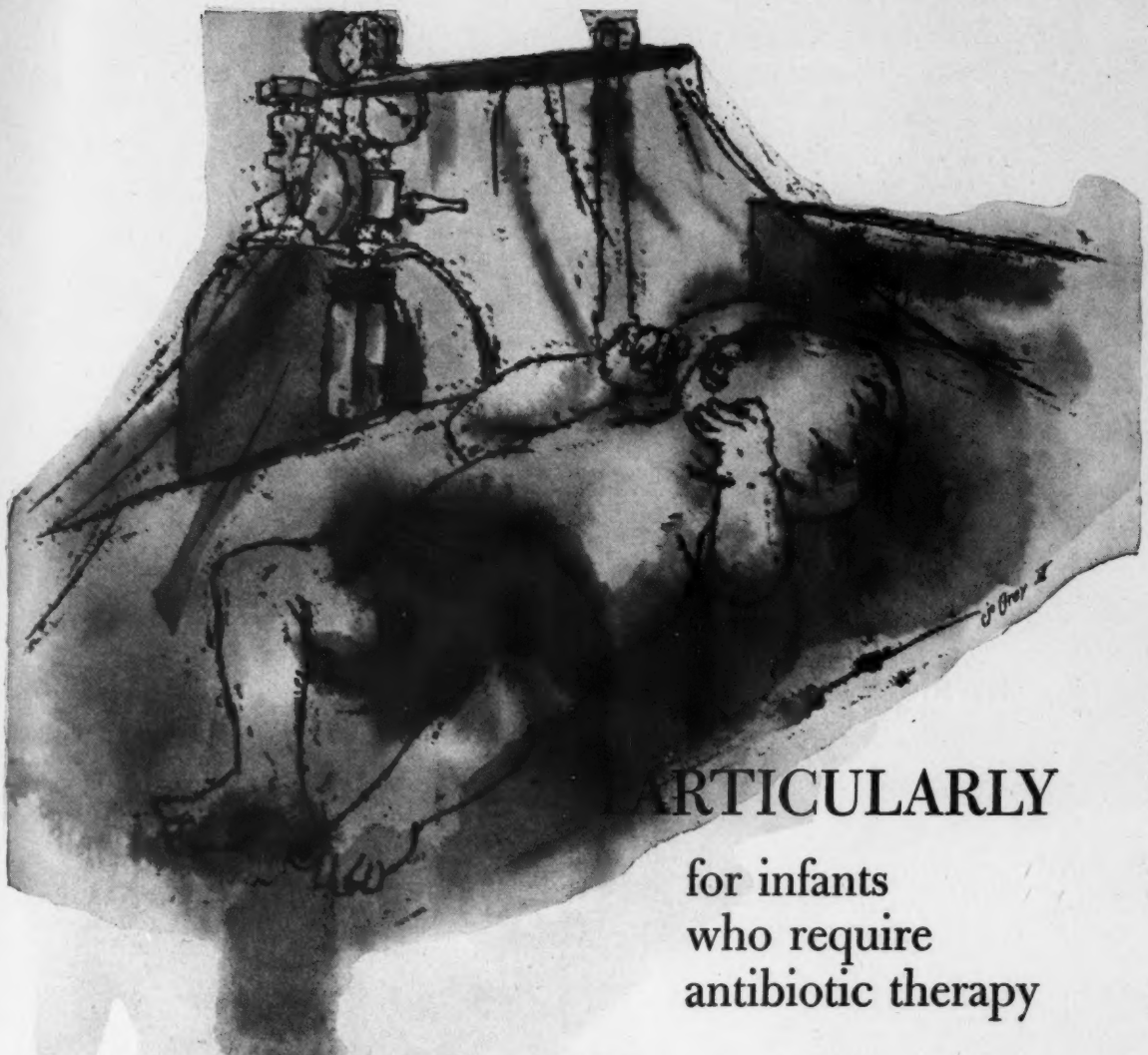
This Preemie Nipple is made of natural latex for *extra* softness and pliability. Its tip is small to fit baby's mouth. The bulb-shaped base can be gently squeezed to assist in the feeding of very weak infants.

DAVOL®

BABY PRODUCTS

Designed with Baby In Mind

DAVOL RUBBER COMPANY
PROVIDENCE 2, R. I.



RTICULARLY

for infants
who require
antibiotic therapy

COSA-TETRASTATIN®

glucosamine-potentiated tetracycline with nystatin

Because infants, particularly the newborn, are prone to secondary fungal infections during antibiotic therapy, they should have extra protection — especially against overgrowth of Candida albicans.

In Cosa-Tetrastatin, this extra protection is provided by nystatin — specific against Candida — while Cosa-Tetracyn® (glucosamine-potentiated tetracycline) provides high levels of antibiotic activity against a broad range of pathogens.

Thus COSA-TETRASTATIN combines tetracycline effectiveness with minimum risk of moniliasis.

Supplied: Capsules (pink & black) 250 mg. Cosa-Tetracyn® plus 250,000 u. nystatin

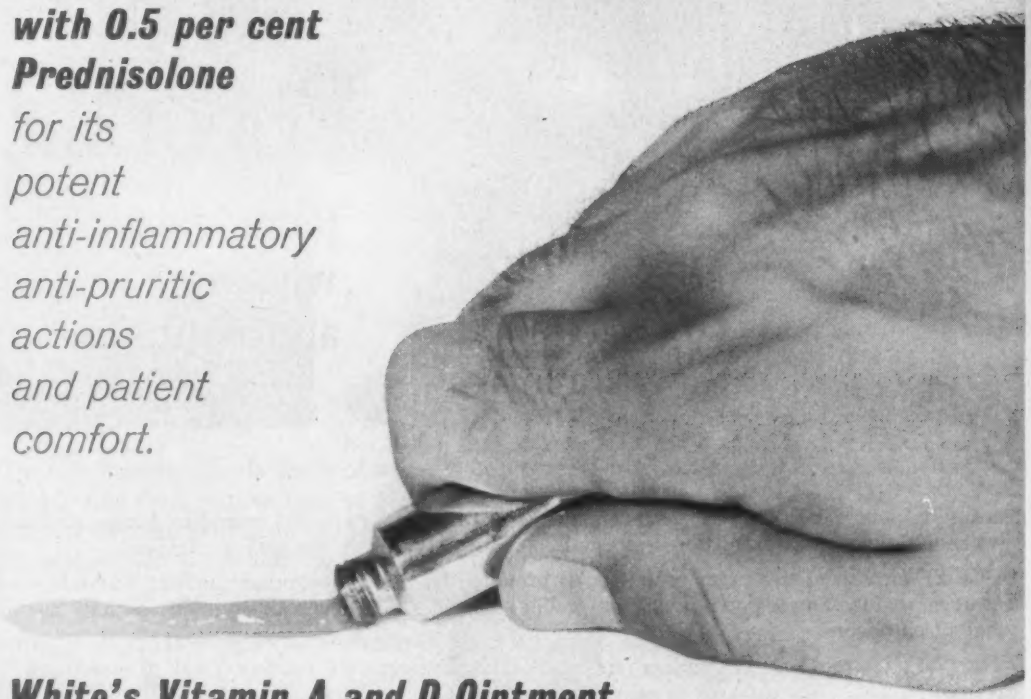
Oral Suspension (orange-pineapple flavor) 2 oz. bottle, each tsp. (5 cc.) contains 125 mg. Cosa-Tetracyn® plus 125,000 u. nystatin

A Professional Information Booklet containing complete details on COSA-TETRASTATIN *is available on request.*

Pfizer *Science for the world's well-being™*

Pfizer Laboratories, Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y.

White's
Vitamin A and D
Ointment
clinically
well established
for its
emollient-protective
and
healing actions is
now also available
with 0.5 per cent
Prednisolone
for its
potent
anti-inflammatory
anti-pruritic
actions
and patient
comfort.



White's Vitamin A and D Ointment
with Prednisolone *0.5 per cent* In 10 and 25 Gm. tubes on prescription.

White Laboratories, Inc.
Kenilworth, New Jersey

IN EPILEPSY—PREREQUISITE FOR PARTICIPATION: THERAPY

With the use of medication, epileptic students may be enabled to participate in many of the same activities as other students.*

REQUISITE FOR THERAPY: THE PARKE-DAVIS FAMILY OF ANTICONVULSANTS

effective anticonvulsants for most clinical needs

for control of grand mal and psychomotor seizures

DILANTIN® Sodium (diphenylhydantoin sodium, Parke-Davis) is supplied in several forms including Kapseals® of 0.03 Gm. and of 0.1 Gm. in bottles of 100 and 1,000.

PHELANTIN® Kapseals (Dilantin 100 mg., phenobarbital 30 mg., desoxyephedrine hydrochloride 2.5 mg.), bottles of 100.

for the petit mal triad

MILONTIN® Kapseals (phensuximide, Parke-Davis) 0.5 Gm., bottles of 100 and 1,000. Suspension, 250 mg. per 4 cc., 16-ounce bottles.

CELONTIN® Kapseals (methsuximide, Parke-Davis) 0.3 Gm., available in bottles of 100.

LITERATURE SUPPLYING DETAILS OF DOSAGE AND ADMINISTRATION AVAILABLE UPON REQUEST.

*Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, Williams & Wilkins Company, 1956, p. 136.

MEDICAMENTA VERA PD CO.

PARKE, DAVIS & COMPANY

DETROIT 32, MICHIGAN

91459

FOR ANXIETY— particularly when expressed as apathy, listlessness and emotional fatigue

TYPICAL PRESENTING SYMPTOMS

loss of normal drive
inability to concentrate or work effectively
indecisiveness
irritability
crying spells
insomnia
anorexia
vague fears
undue preoccupation with somatic complaints
wide swings of mood
generalized discomfort
headaches
dizziness
palpitations
hyperventilation
epigastric distress

NEW

1 mg. STELAZINE* TABLETS

brand of trifluoperazine

'Stelazine' is unique because it not only relieves agitation and tension, but also relieves apathy, listlessness and emotional fatigue resulting from anxiety states.

Other noteworthy characteristics of 'Stelazine', brought out in clinical studies in over 12,000 patients, are:

* may be effective when other agents fail
* side effects usually slight and transitory
* fast therapeutic response with very low doses
* convenient b.i.d. administration

"THE INDIFFERENCE WHICH OCCURS COMMONLY WITH [MOST] OTHER TRANQUILIZERS WAS ABSENT."[1]

This observation about 'Stelazine' points to what may be one of the most important and distinguishing characteristics of the drug—that is, 'Stelazine', while relieving emotional distress, does not "tranquilize" your patients out of normal activity or normal aims.

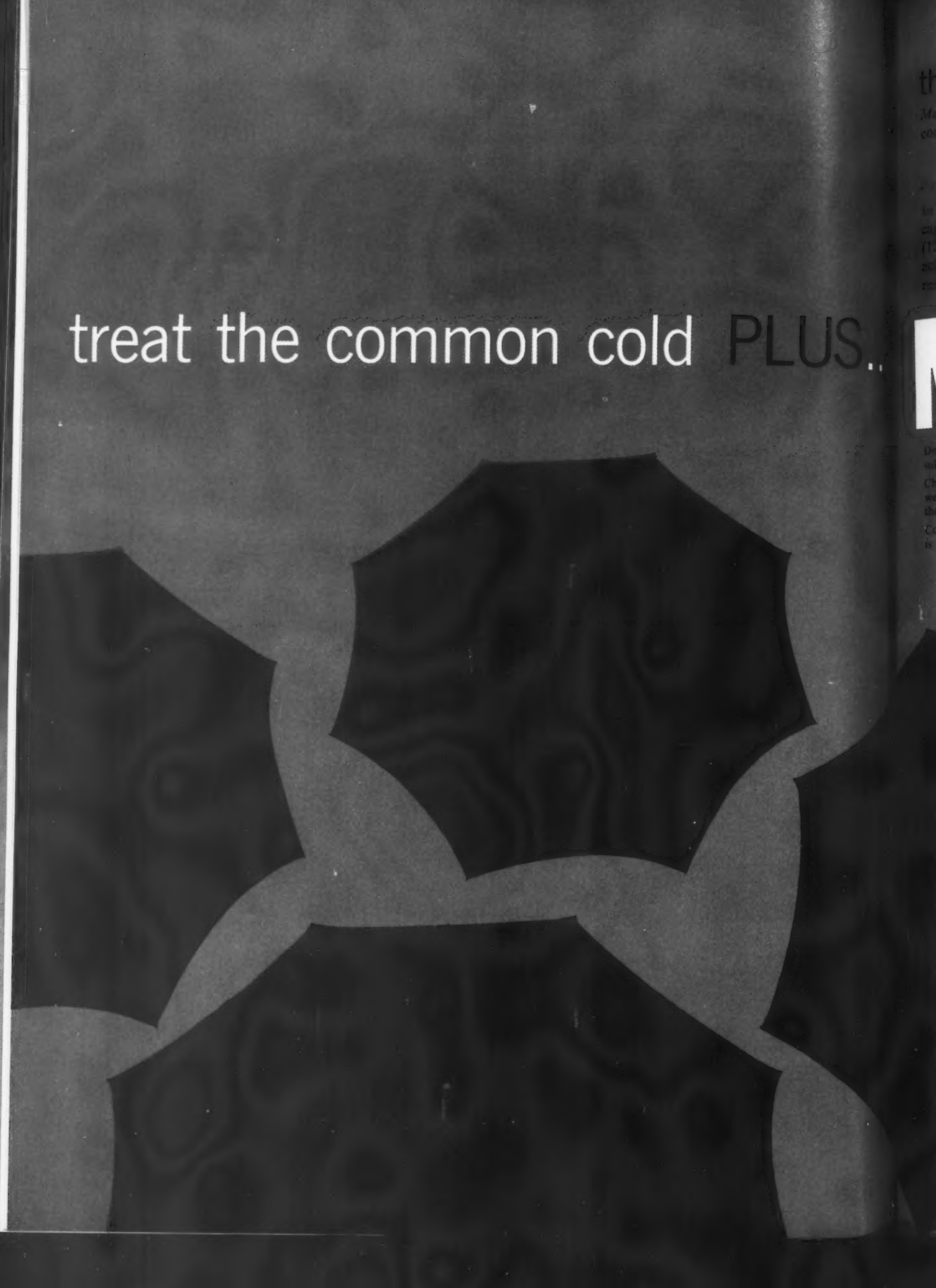
AVAILABLE for use in everyday practice—1 mg. tablets, in bottles of 50 and 500. Literature available on request. Smith Kline & French Laboratories, Philadelphia.

REFERENCES: 1. Gearren, J.B.: Dis. Nerv. System *20*:66 (Feb.) 1959. 2. Margolis, E.J.; Pauley, W.G.; Cauffman, W.J., and Gregg, P.C.: Scientific Exhibit at the 12th Clinical Meeting of the American Medical Association, Minneapolis, Minn., Dec. 2-5, 1958. 3. Phillips, F.J., and Shoemaker, D.M.: *ibid.* 4. Ayd, F.J., Jr.: Clin. Med. 6:387 (Mar.) 1959.

*Trademark

SMITH KLINE & FRENCH

leaders in psychopharmaceutical research


treat the common cold PLUS..

the full therapeutic potential of Madribon

Madribon, a safe, low-dosage antibacterial, controls most bacterial infections seen in general practice—promptly, economically, without the risk of unpleasant after-effects.

...PLUS prompt relief of acute symptoms

In addition to *Madribon* (125 mg), each capsule contains: *N-acetyl-p-aminophenal* (120 mg), to reduce fever, relieve headache, myalgia and other discomforts of respiratory disorders; *Thephorin tartrate* (10 mg)—a well-tolerated antihistamine—to relieve congestion, sneezing, tearing and other allergic reactions; *caffeine* (30 mg), to allay drowsiness and fatigue, help combat that "dragged out" feeling.

MADRICIDIN

Dosage: Adults—first day, 2 capsules q.i.d.; 1 capsule q.i.d. thereafter.

Children—first day, 2 capsules per 20 lbs body weight; 1 capsule per 20 lbs body weight daily thereafter—given in single or divided doses.

Continue therapy for 5 to 7 days or until patient is asymptomatic for at least 48 hours.

Caution: The usual precautions in sulfonamide therapy should be observed, including maintenance of adequate fluid intake. If toxic reactions or blood dyscrasias occur, use of the drug should be discontinued.

MADRIBON®—2,4-dimethoxy-6-sulfanilamido-1,3-diazine
MADRICIDIN™
THEPHORIN® Tartrate—brand of phenindamine tartrate ROCHE®

ROCHE
LABORATORIES
Division of
Hoffmann-La Roche Inc.
Nutley 10 • N. J.

relieve the tension—and control its G.I. sequelae

...Pathibamate®

meprobamate with PATHILON® tridihexethyl chloride Lederle

for relieving tension and curbing hypermotility and excessive secretion in G. I. disorders

PATHIBAMATE combines two highly effective and well-tolerated therapeutic agents:

meprobamate (400 mg. or 200 mg.) — a tranquilizer and muscle-relaxant widely accepted for the effective management of tension and anxiety

PATHILON (25 mg.)—an anticholinergic long noted for producing prompt symptomatic relief through peripheral, atropine-like action, yet with few side effects

now available...

PATHIBAMATE-200 Tablets

200 mg. meprobamate • 25 mg. PATHILON

for more flexible control of G. I. trauma and tension
smooth, sugar-coated, easy-to-swallow

PATHIBAMATE-400 and PATHIBAMATE-200 are indicated for duodenal ulcer; gastric ulcer; intestinal colic; spastic and irritable colon; ileitis; esophageal spasm; anxiety neurosis with gastrointestinal symptoms and gastric hypermotility.

Supplied: **PATHIBAMATE-400**—Each tablet (yellow, 1/2-scored) contains meprobamate, 400 mg.; PATHILON tridihexethyl chloride, 25 mg.
PATHIBAMATE-200—Each tablet (yellow, coated) contains meprobamate, 200 mg.; PATHILON tridihexethyl chloride, 25 mg.

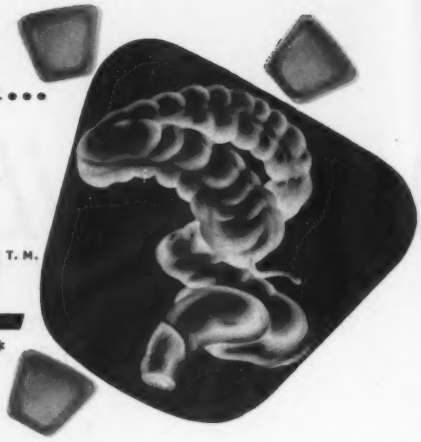
Administration and Dosage: **PATHIBAMATE-400**—1 tablet three times a day at mealtime and 2 tablets at bedtime.
PATHIBAMATE-200—1 or 2 tablets three times a day at mealtime and 2 tablets at bedtime.
Adjust dosage to patient response.

Contraindications: glaucoma; pyloric obstruction, and obstruction of the urinary bladder neck.

Lederle LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

new concept for chronic constipation...

and especially that associated with the irritable bowel syndrome



DECHOTYL™

TRABLETS*

safe, gentle transition to normal bowel function

DECHOTYL provides gentle stimulation of the bowel and helps restore normal consistency of the intestinal contents to gradually re-establish normal bowel function in your chronically constipated patients.

THE RATIONALE of DECHOTYL is based on an effective combination of therapeutic agents:

DECHOLIN®, dehydrocholic acid, AMES, (200 mg.), the most potent hydrocholeretic available, is a chemically pure bile acid and has been used effectively in the treatment of biliary tract disorders for many years. It produces an increased flow of thin bile which helps to lower surface tension of intestinal fluids, promotes emulsification and absorption of fats and mildly stimulates intestinal peristalsis.

Desoxycholic Acid (50 mg.), a choleretic, also is a chemically pure bile acid and stimulates an increased flow of bile, lowers surface tension and stimulates peristalsis. By emulsifying fat globules, desoxycholic acid aids the digestive action of the fat-splitting enzyme, lipase. DECHOLIN and desoxycholic acid thus favorably influence the constitution and the movement of the intestinal contents.

Dioctyl Sodium Sulfosuccinate (50 mg.) is a wetting agent which lowers surface tension and aids the penetration of intestinal fluids into the fecal mass, providing a moist stool of normal consistency.

EFFECTIVE: Bile influences the constitution as well as the movement of the intestinal contents. The ingredients of major importance are DECHOLIN and desoxycholic acid which increase the flow of bile, lower surface tension, promote emulsification and absorption of fats and mildly stimulate intestinal peristalsis. With dioctyl sodium sulfosuccinate, a good therapeutic effect can be obtained without the danger of toxicity or decreasing effectiveness even when used regularly.

SAFE: Clinical evidence indicates that the constituents of DECHOTYL cause no systemic sensitivity, drug accumulation, habituation or interference with nutrition. Orally, in therapeutic amounts, DECHOTYL is without significant toxic effect. The only side effect following oral administration is diarrhea if the dosage is excessive.

Dosage: *Average adult dose*—Two TRABLETS* at bedtime. Some individuals initially may require 1 to 2 TRABLETS three or four times daily. *Contraindications:* Biliary tract obstruction; acute hepatitis.

Available: TRABLETS,* coated, yellow, trapezoid-shaped; bottles of 100.

AMES
COMPANY, INC
Elkhart • Indiana
Toronto • Canada

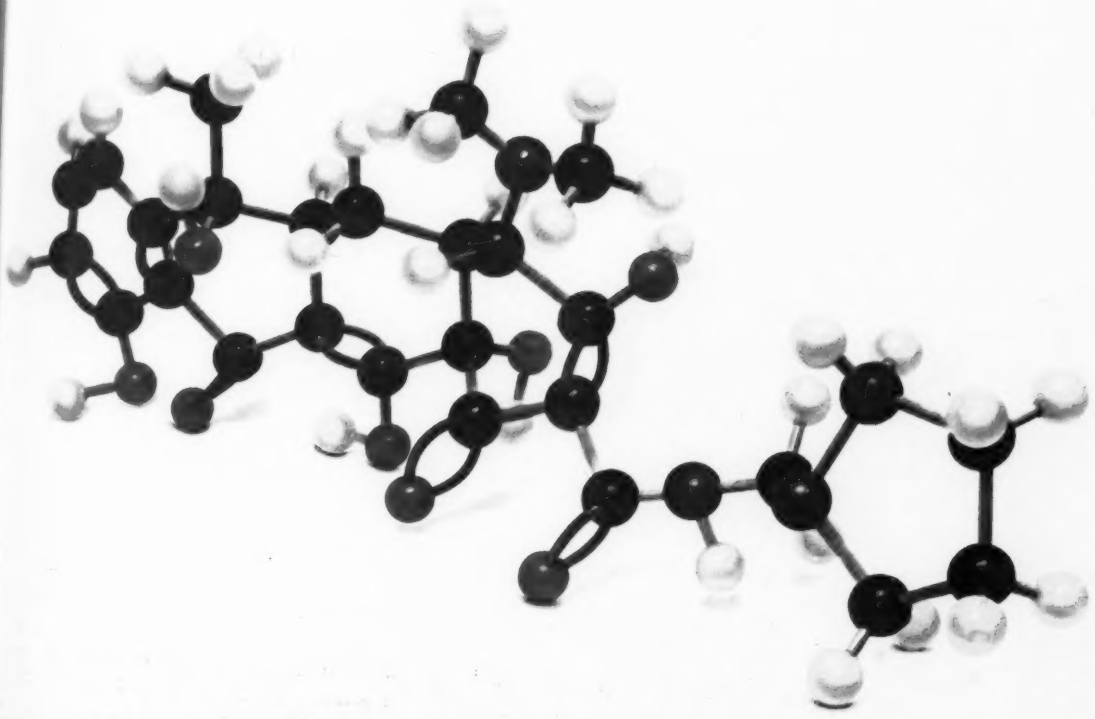
*T.M. for AMES trapezoid-shaped tablet.

78189

Bristol Laboratories
announces
the synthesis of an **improved**
broad-spectrum antibiotic

SYNTETRIN™

N—(PYRROLIDINOMETHYL) TETRACYCLINE



a new molecule

a new synthetic derivative of tetracycline with new attributes of significant value in therapy

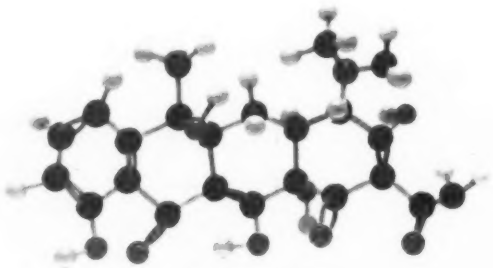
SYNTETRIN

SYNTETRIN is N—(pyrrolidinomethyl) tetracycline, a new derivative of tetracycline developed by Bristol Laboratories. It is highly soluble over the entire physiological pH range (2,500 times more soluble than tetracycline – see Figure 1).

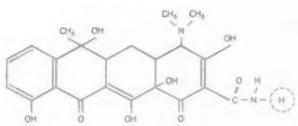
SYNTETRIN is a *different* molecule, as can be seen by examining the chemical structure and the molecular weights of both tetracycline and SYNTETRIN.

A pyrrolidinomethyl group replaces one of the hydrogen atoms in the NH_2 group as shown at the extreme right of the molecule.

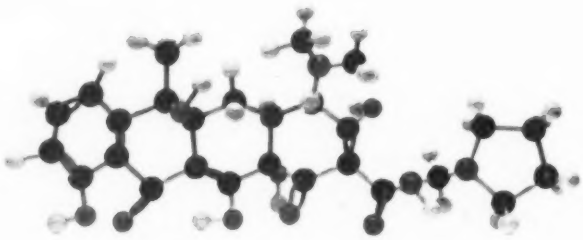
The important point is that there is a change in the *basic molecular structure* of tetracycline. The new properties of SYNTETRIN do not derive from salt or complex formation, or from adjuvant action.



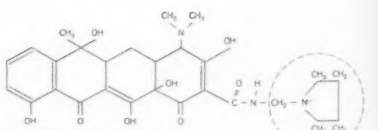
TETRACYCLINE



molecular weight 444.45



SYNTETRIN



molecular weight 527.55

pyrrolidinomethyl group

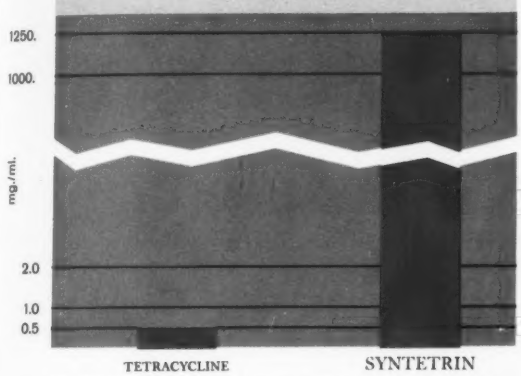
SYNTETRIN ***is at present available only in intramuscular and intravenous formulations.***

greater 24-hour therapeutic activity with Syntetrin I. M.

Total antibiotic activity with SYNTETRIN I.M. is more than twice that with tetracycline phosphate complex I.M. over a 24-hour period. This is evident from a crossover study of blood levels of 15 subjects by Kligman.[1] His plotted data, shown in Figure 2, indicate that the area under the curve of SYNTETRIN blood levels is more than twice that of tetracycline phosphate complex. With the area under the curve of tetracycline phosphate complex considered as 100, the area under SYNTETRIN was measured with the planimeter as 204. The probability of this difference occurring by chance is less than 1 in 1,000. It is important to note that both products contained the labeled quantity of active ingredient equivalent to 250 mg. of tetracycline HCl activity, and each product contained a 10 per cent overfill. This enhancement of total antibiotic activity seems to be related to the unique solubility of SYNTETRIN, and its more efficient absorption from intramuscular sites.

FIGURE 1

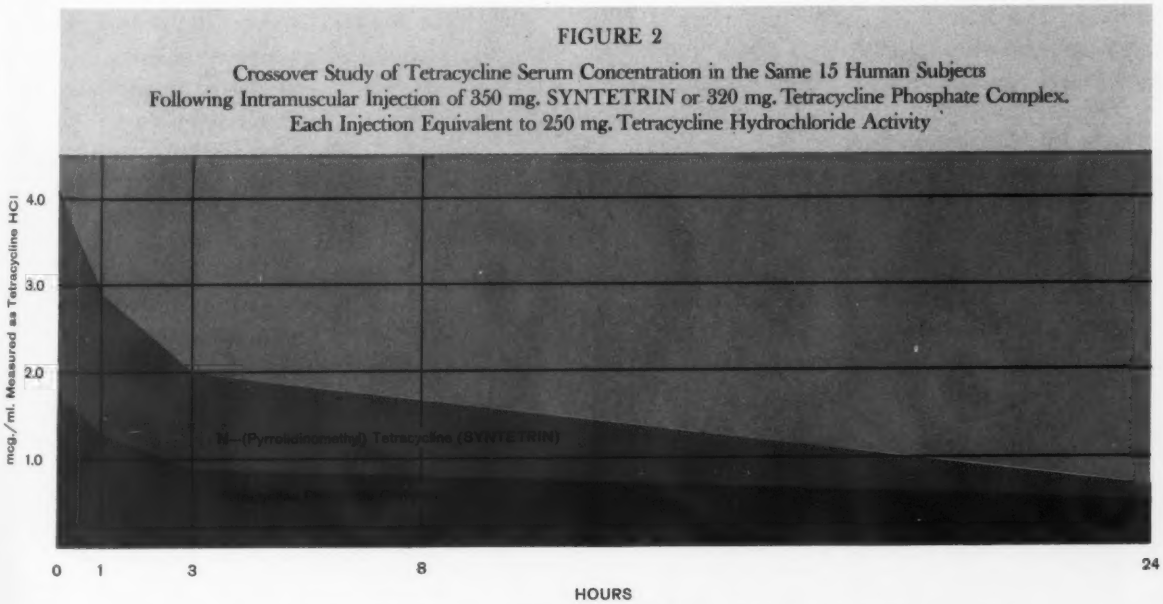
Solubility in water



Adapted from Siedel, W.; Soder, A., and Lindner, F.: München. med. Wchnschr. 100:661, 1958.

FIGURE 2

Crossover Study of Tetracycline Serum Concentration in the Same 15 Human Subjects Following Intramuscular Injection of 350 mg. SYNTETRIN or 320 mg. Tetracycline Phosphate Complex. Each Injection Equivalent to 250 mg. Tetracycline Hydrochloride Activity



The differences between SYNTETRIN and tetracycline levels at all hours shown above are statistically significant. (This difference would occur by chance in less than 1 in 1,000 times.)

with SYNTETRIN
effective antibacterial activity is s
even at its lowest blood lev

TABLE I

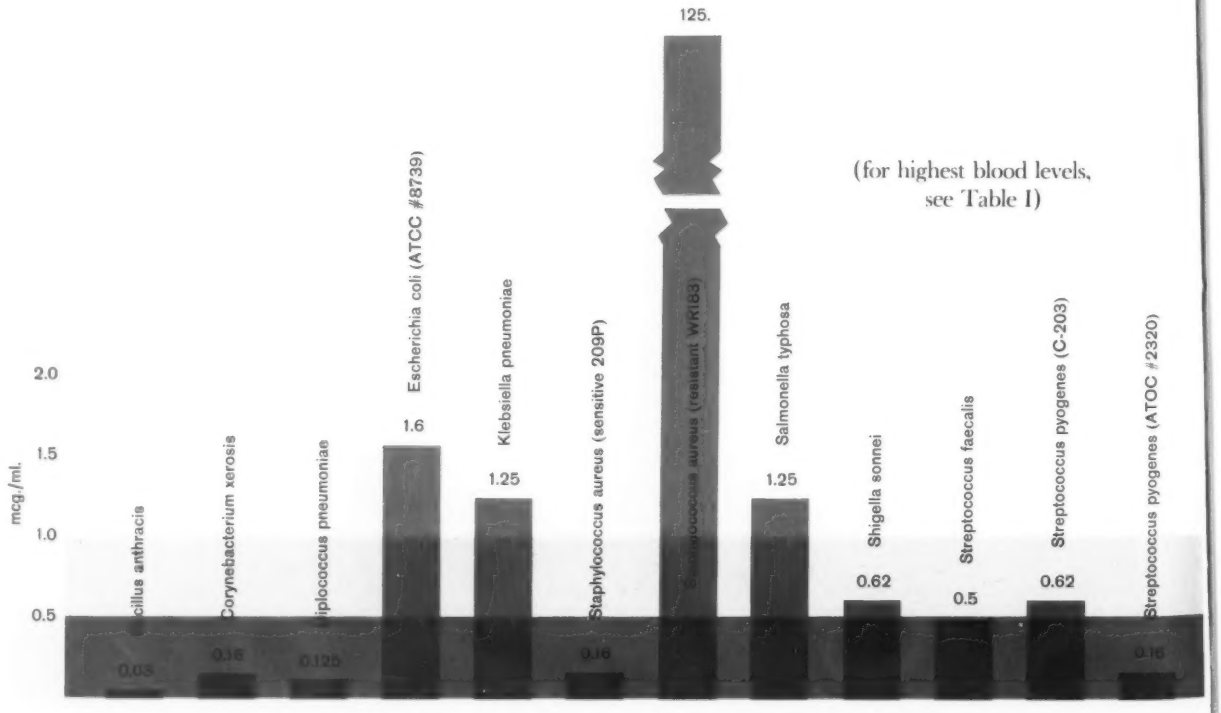
Serum Concentration Studies (mcg./ml. as Tetracycline HCl) of SYNTETRIN in Humans
Unit dose: 350 mg. q. 24 hours I. M.

INVESTIGATOR	NO. OF SUBJECTS	HOURS AFTER ADMINISTRATION							
		1	24	25	48	49	72	73	96
Kligman[1]	5	1.5	0.5	3.5	0.8	4.0	0.9	3.2	1.0
Cohn[2]	9	3.2	0.6	4.2	0.6	4.6			
Cronk[3]	10	5.2	0.6	5.0	0.6	5.2	0.8	5.5	0.8

Note that the lowest blood levels reached before each daily injection, shown by the red figures, indicate either *maintenance* or *increase*. While of less importance than the above, it is significant that the successive blood level peaks generally rose, i.e., at 25, 49, and 73 hours.

FIGURE 3

Minimum In Vitro* Concentrations of SYNTETRIN Which Will Inhibit Growth of Some Pathogens Against Which Tetracyclines Are Ordinarily Used



*two-fold serial tube dilution technique in heart infusion broth; measured as tetracycline HCl

ity is sustained–
od levels–throughout therapy

Figure 3 clearly demonstrates that the minimum in vitro concentrations of SYNTETRIN which will inhibit the organisms are reached in most instances even with the *lowest blood level* attained throughout the period of therapy (note the range of lowest blood levels from Table I indicated by light blue horizontal band).

Also, Table I shows *enhancement* of these levels after repeated injections. Figure 3 indicates that this may be therapeutically significant for some patients, because minimum inhibitory concentrations for certain organisms will be reached with SYNTETRIN on continuing therapy.

The advantages of parenteral administration of Syntetrin in selected patients

There are three categories of patients which will benefit from the parenteral administration of SYNTETRIN:

1. *Patients who require frequent force-feeding or special diets based on milk.* Various investigators have emphasized that food, milk, and calcium may interfere with the absorption of orally administered tetracyclines from the digestive tract.

Price *et al.*[4] made a detailed study in relation to the observed antagonistic effect of milk on oxytetracycline and chlortetracycline.

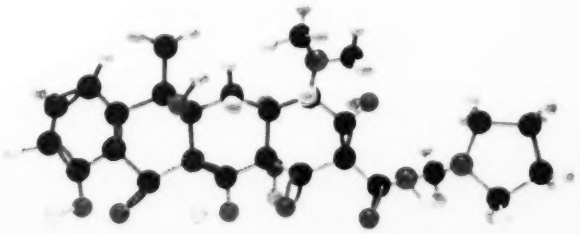
They clearly demonstrated that readily ionizable salts of calcium and magnesium have considerable inhibitory effect on the action of such antibiotics in vitro. Dearborn and associates,[5] in animal experiments, showed that food and dicalcium phosphate distinctly lowered antibiotic activity; and Sweeney and his colleagues[6] demonstrated that calcium compounds decreased the absorption of tetracycline in man.

2. *Patients with diseases causing absorption difficulties.* Finland[7] points out that, in addition to difficulties in absorption associated with G. I. pathology, serious systemic illness may interfere with antibiotic absorption. He states that "marked irregularities in absorption . . . can be expected in the routine use of multiple doses [by the oral route] in sick patients, when large and often excessive doses must be used to insure therapeutic success."

Such difficulties in achieving therapeutic levels, e. g., in pneumonia associated with cardiac insufficiency, may be avoided by the parenteral route.

3. *Patients unable to take anything by mouth.* Examples are patients after G. I. surgery, those requiring gastric intubation, etc.

Indications: SYNTETRIN is recommended for parenteral use for infections caused by tetracycline-sensitive organisms in the above types of patients. While a *single* intramuscular injection of SYNTETRIN is *less painful* than other tetracycline intramuscular preparations, repeated injections of SYNTETRIN may be painful, particularly to children. As soon as the patient's condition suggests that the oral route is dependable, SYNTETRIN I.M. therapy should be changed to TETREX Capsules or Syrup.



SYNTETRIN I.M.

N—(PYRROLIDINOMETHYL) TETRACYCLINE WITH XYLOCAINE®*
FOR INTRAMUSCULAR USE

Supplied in dry-fill vials which must be properly reconstituted before injection. Each single dose vial contains:

SYNTETRIN	350 mg.
Lidocaine	40 mg.
Ascorbic Acid	300 mg.

SYNTETRIN I.M. is also supplied in single dose dry-fill vials containing 150 mg. of SYNTETRIN.

*Xylocaine is the registered trademark of Astra Pharmaceutical Products, Inc. for lidocaine.

also available:

SYNTETRIN I.V.

N—(PYRROLIDINOMETHYL) TETRACYCLINE
FOR INTRAVENOUS USE

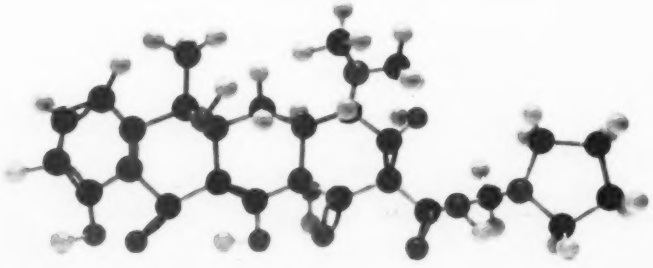
For use only in severe infections when the patient cannot accept oral or intramuscular tetracycline therapy. Each dry-fill vial contains:

SYNTETRIN	700 mg.
Ascorbic Acid	500 mg.

Precautions: SYNTETRIN I.M. should be injected deeply into the upper outer quadrant of the gluteal muscle, using special care to avoid inadvertent injection of the solution into dermal or subcutaneous tissue, resulting in unnecessary pain and tissue reaction. Deep intramuscular injection and avoidance of subcutaneous or dermal spill greatly increase tolerance to the product. The usual precautions for avoidance of extra-venous spill should be observed with SYNTETRIN I.V.

References: 1. Kligman, A. M.: Clinical report to Bristol Laboratories Inc. 2. Cohn, I., Jr.: Clinical report to Bristol Laboratories Inc. 3. Cronk, G. A.: Clinical report to Bristol Laboratories Inc. 4. Price, K. E.; Zolli, Z., Jr.; Atkinson, J. C., and Luther, H. G.: Antibiotics & Chemother. **7**:672, 1957. 5. Dearborn, E. H.; Litchfield, J. T., Jr.; Eisner, H. J.; Corbett, J. J., and Dunnett, C. W.: Antibiotic Med. & Clin. Ther. **4**:627, 1957. 6. Sweeney, W. M.; Hardy, S. M.; Dornbush, A. C., and Ruegsegger, J. M.: Antibiotic Med. & Clin. Ther. **4**:642, 1957. 7. Finland, M.: Antibiotic Med. & Clin. Ther. **5**:359, 1958.

Detailed information on indications, dosage and precautions is contained in the package insert; or, write to Medical Director, Bristol Laboratories Inc., Syracuse, New York.
SYNTETRIN *is now available at your hospital.*



BRISTOL

For the first time

CONVENIENCE · ECONOMY

in parenteral Broad-Spectrum antibiotic therapy

TERRAMYCIN®

brand of oxytetracycline

INTRAMUSCULAR SOLUTION

New ready-to-inject ampule form provides economical Broad-Spectrum activity for that all-important first dose.

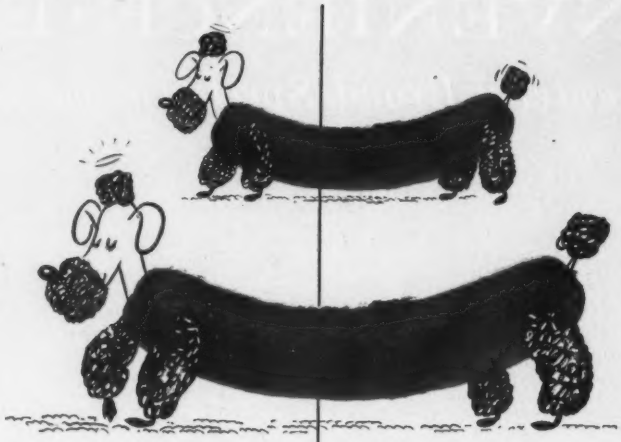
Supplied: Terramycin Intramuscular Solution*
100 mg./2 cc. ampule
250 mg./2 cc. ampule

Complete information on Terramycin Intramuscular Solution is available through your Pfizer Representative or the Medical Department, Pfizer Laboratories.

Pfizer *Science for the world's well-being™* Pfizer Laboratories, Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y.

*Contains 2% Xylocaine® (lidocaine), trademark of Astra Pharmaceutical Products, Inc.

Now,



THESE DOGS WON'T BITE!

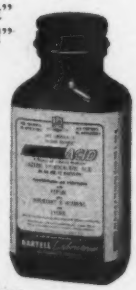
Patients often have odd or humorous ways of describing their symptoms, their discomfort . . . even themselves. When they say that "they like steak, but steak doesn't like them" . . . or tell you that "I love them—but hot dogs bite back", they are colloquially expressing their symptoms of indigestion whether this be gas, bloating or other gastric complaints. Nature, unassisted, often is unable to stimulate the secretion of sufficient HCl to properly activate peptic digestion of protein, especially for those of us 35 or over. For those patients the revolutionary, new Dartell *accelerated* digestant, ACCEĹACID Tablets, affords fast, efficient relief . . . enables most patients to again add delicious, essential, health-giving protein dishes to their daily diet. New ACCEĹACID Tablets swiftly disintegrate in the stomach, *instantly releasing pepsin-activating hydrochloric acid . . . just as Nature does . . . right at the start of the meal.* There is *no dangerous delayed release* to impair the normal discharge of the stomach's content, 3 or 4 hours after the meal. ACCEĹACID follows "Nature's own" acidulating pattern of gastric secretion. Order ACCEĹACID, in *instant release Accelé-Tab* form, Today . . . Now your patients, and yourself, no longer need to fear the consequences of healthful, mealtime proteins. "Now . . . with new, "natural-fast" ACCEĹACID, "Hot Dogs Won't Bite!"

*Instant Release**

ACCELÉACID

FAST ACTING ACCELÉ-TABS†

ANOTHER FINE FORMULA - PRODUCT OF ADVANCED BIOCHEMISTRY



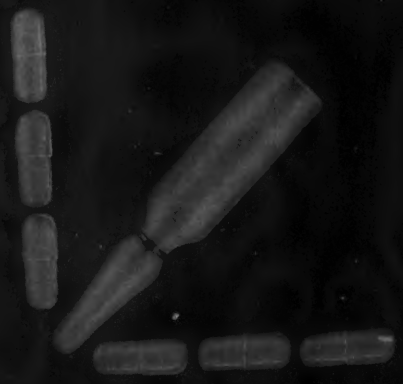
†Accelé-Tabs: Dartell Laboratories' Trade Mark for accelerated action, instant release tablets.

*Release starts in seconds—complete release in minutes.

DARTELL LABORATORIES

LOS ANGELES 15, CALIFORNIA • OFFICES IN PRINCIPAL CITIES

COMPATIBLE · COORDINATED ANTIBIOTIC THERAPY



New TERRAMYCIN®
brand of oxytetracycline
INTRAMUSCULAR SOLUTION

Initiation of therapy in *minutes after diagnosis* with new, ready-to-inject Terramycin Intramuscular Solution provides maximum, sustained absorption of potent broad-spectrum activity.

Supply:
*Terramycin Intramuscular Solution**
100 mg./2 cc. ampule
250 mg./2 cc. ampule
Cosa-Terramycin Capsules
125 mg. and 250 mg.

COSA-TERRAMYCIN®
oxytetracycline with glucosamine
CAPSULES

Continuation with oral Cosa-Terramycin every six hours will provide highly effective antibacterial serum and tissue levels for prompt infection control.

Cosa-Terramycin is also available as:
Cosa-Terramycin Oral Suspension
peach flavored, 125 mg./5 cc., 2 oz. bottle
Cosa-Terramycin Pediatric Drops
peach flavored, 5 mg./drop (100 mg./cc.), 10 cc. bottle with calibrated dropper

The unsurpassed record of clinical effectiveness and safety established for Terramycin is your guide to successful antibiotic therapy.

Complete information on Terramycin Intramuscular Solution and Cosa-Terramycin oral forms is available through your Pfizer Representative or the Medical Department, Pfizer Laboratories.

Pfizer *Science for the world's well-being™*

PFIZER LABORATORIES, Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y.

*Contains 2% Xylocaine® (lidocaine), trademark of Astra Pharmaceutical Products, Inc.

with new Sinutab*

Sinutab aborts pain, decongests and provides patient-comfort

Sinutab aborts pain with two analgesics, systemically opens air passages to relieve stuffiness and congestion and provides patient-comfort with mild tranquilization.

DOSAGE: *Adults,* two tablets every four hours. Prophylactically, one tablet every four hours. *Children 6 to 12 years,* one-half adult dose. SUPPLIED: Bottles of 30 tablets. SINUTAB FORMULATION: N-acetyl-para-aminophenol (APAP), 150 mg., (2½ gr.); Acetophenetidin, 150 mg., (2½ gr.); Phenylpropanolamine HCl, 25 mg., (⅜ gr.); Phenyltoloxamine Dihydrogen Citrate, 22 mg., (¼ gr.)

WARNER CHILCOTT

but she needs **your** help **to plan her family**

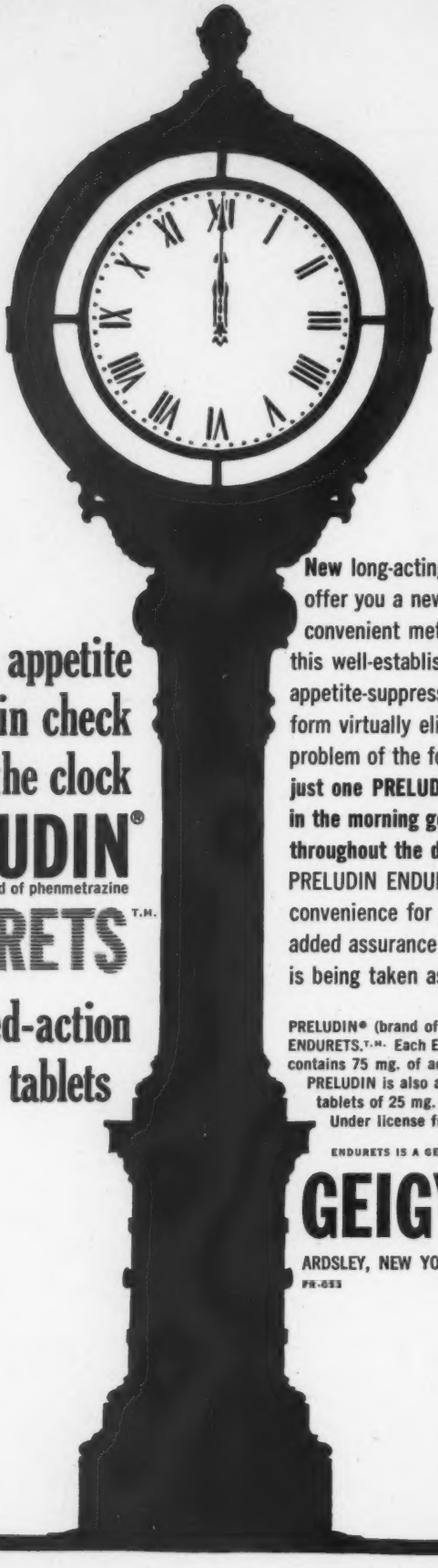
Delfen®
VAGINAL CREAM

THE MODERN CHEMICAL SPERMICIDE

Preceptin®
VAGINAL GEL

THE SPERMICIDAL GEL WITH BUILT-IN BARRIER

PRESCRIBED WITH CONFIDENCE FOR SIMPLE, EFFECTIVE CONTRACEPTION



keeping appetite
in check
around the clock

PRELUDIN®
brand of phenmetrazine

ENDURETS™

prolonged-action
tablets

New long-acting PRELUDIN ENDURETS offer you a new method...a more convenient method...of administering this well-established, reliable appetite-suppressant. The new ENDURETS form virtually eliminates the vexing problem of the forgotten dose because... **just one PRELUDIN ENDURET taken in the morning generally curbs the appetite throughout the day.**

PRELUDIN ENDURETS afford greater convenience for your patient... added assurance to you that medication is being taken as prescribed.

PRELUDIN® (brand of phenmetrazine hydrochloride) ENDURETS.™ Each ENDURETS prolonged-action tablet contains 75 mg. of active principle.

PRELUDIN is also available as scored, square pink tablets of 25 mg. for 2 to 3 times daily administration.

Under license from C. H. Boehringer Sohn, Ingelheim.

ENDURETS IS A GEIGY TRADEMARK.

GEIGY

ARDSLEY, NEW YORK

PR-653

no asthma symptoms—One Tedral tablet, taken at the *first* sign of attack, helps most chronic asthma patients breathe normally and live actively... stay free of bronchospasm, mucous congestion and apprehension. For especially frequent or severe attacks, prescribe 1 or 2 Tedral tablets every 4 hours plus an additional tablet at the first sign of symptomatic break-through. Tedral is available in *five* convenient dosage forms.

Formula: theophylline, 130 mg., (2 gr.); ephedrine HCl, 24 mg., (⅜ gr.); phenobarbital, 8 mg., (⅛ gr.).

TEDRAL®

the dependable antiasthmatic

WARNER CHILCOTT

MORRIS PLAINS, N.J.

Before Esidrix:
Weight 176 lbs.

27 pounds lost in 19 days; ascites and

RECORD OF TREATMENT (At a leading New York City hospital. Photos used with permission of the patient.)

Date	3/3	3/4	3/5	3/6	3/7	3/8	3/9	3/10	3/11	3/12	3/13	3/14	3/15	3/16	3/17	3/18	3/19	3/20	3/21	3/22	3/23
Weight (pounds)	178	176	170	169	167	159	158	158	157	153	155	155	156	154	153	154	153	–	–	151	149
Rx	M*		Esidrix 50 mg. b.i.d.																		

*Mercurial diuretic

Esidrix T.M.

(hydrochlorothiazide CIBA)

pre-eminently effective whenever diuresis is desired

Indicated in: congestive heart failure . . . nephrosis and nephritis . . . toxemia of pregnancy . . . premenstrual edema . . . edema of pregnancy . . . steroid-induced edema . . . edema of obesity

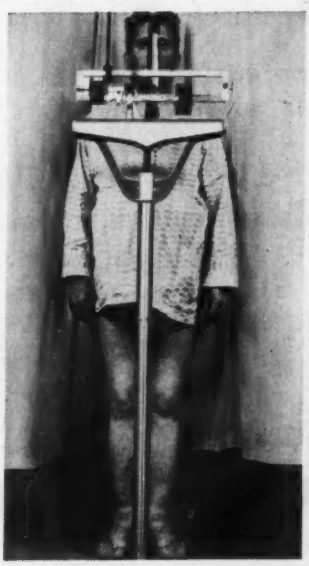
Supplied: Esidrix *Tablets,* 25 mg. (pink, scored) and 50 mg. (yellow, scored); bottles of 100 and 1000.

CIBA
SUMMIT, N. J.

pedal edema reduced with Esidrix

H. K., 44 years old, was admitted to the hospital on 3/3/59 with complaints of *swollen abdomen, swelling of both legs and exertional dyspnea.* These symptoms had been intensifying over a three-week period. The patient's history included heavy drinking since the age of 18, and one prior admission to the hospital in 1954 with ascites and pedal edema. Diagnosis, at that time, was Laennec's cirrhosis, and the patient responded well to a regimen of diuretics, salt restriction and multivitamins. There was no recurrence up to that leading to his current admission.

2/2714MK



Clinical findings worthy of note: Eyes — conjunctivae and sclerae slightly icteric. Chest—diaphragm elevated. Abdomen — girth enlarged, definite fluid wave. Liver palpated 4 fingerbreadths below the costal margin; no other palpable viscera. Extremities—pedal edema (4+).

The patient is well developed and not in acute distress. Blood pressure, 140/80 mm. Hg; pulse, 112/min.; respiration, 20/min. Impression: Laennec's cirrhosis—decompensated.

Treatment: Mercurial diuretic on 3/3 and 3/4, followed by Esidrix, 50 mg. b.i.d., from 3/5 to 3/23 when patient signed out of hospital. Esidrix induced copious diuresis resulting in almost complete disappearance of edema.

New Enzyme-controlled antifungal therapy to meet the growing challenge of Monilial Vaginitis

IN PREGNANCY / IN DIABETES / AFTER ANTIBIOTIC THERAPY–Today, monilial vaginitis is estimated to be a problem in at least 33 per cent of pregnant women and about 10 per cent of nonpregnant females[1]—a rapidly increasing incidence attributed partly to the widespread use of antibiotics.

"Vanay" Vaginal Cream broadens the scope of specific therapy: (1) "Vanay" insures a continuous therapeutic fungistatic effect without danger of local reaction; (2) in addition, "Vanay" restores and maintains a physiologic pH and normal vaginal flora—reducing risk of reinfection.

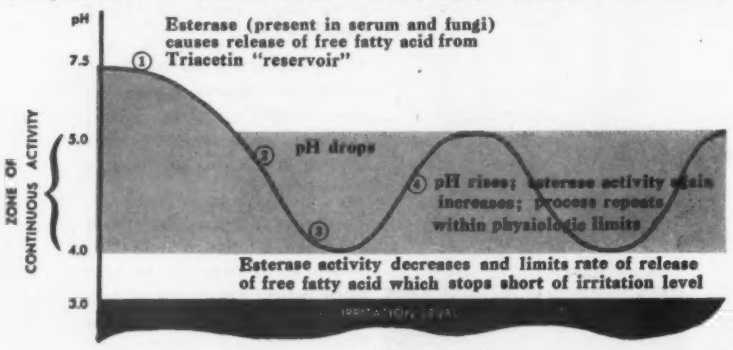
Effective response: Treatment was notably effective in moniliasis, as confirmed by symptomatic relief and post-treatment smears, Assali reports.[2] Marked clinical improvement was also noted in 154 of 206 patients, and in some cases symptoms subsided within a week of therapy.[3]

Other advantages: No monilial resistance demonstrated[4] / prolonged duration of activity[4] / nonsensitizing / nonirritating / nonstaining / odorless.

"VANAY" Vaginal Cream

BRAND OF TRIACETIN IN NONLIQUEFYING BASE

UNIQUE ENZYME-CONTROLLED FUNGISTASIS WITHOUT IRRITATION[5,6]


pH
7.5
5.0
4.0
3.0
ZONE OF CONTINUOUS ACTIVITY
Esterase (present in serum and fungi) causes release of free fatty acid from Triacetin "reservoir"
pH drops
pH rises; esterase activity again increases; process repeats within physiologic limits
Esterase activity decreases and limits rate of release of free fatty acid which stops short of irritation level
IRRITATION LEVEL

Indications: specific in monilial vaginitis...adjunctive in trichomoniasis . . . also valuable in nonspecific vaginitis where an acid pH must be restored and maintained.

Usual Dosage: 2 to 4 grams daily.

Supplied: No. 204-250 mg. Glyceryl triacetate per gram in a nonliquefying base. Combination package: 1½ oz. tube with 15 disposable applicators.

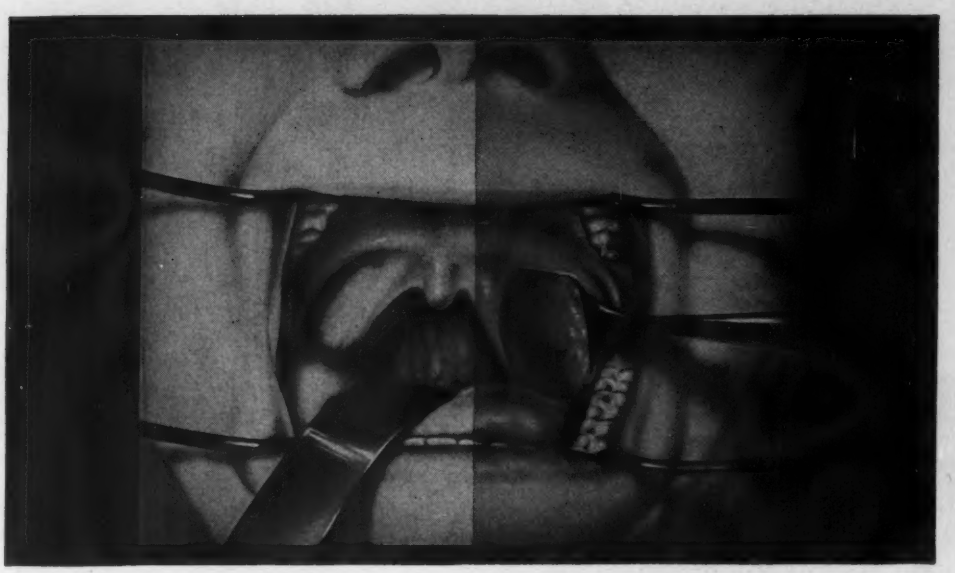
References: 1. Idson, B.: Drug & Cosmetic Industry *84*:30 (Jan.) 1959. 2. Assali, N. S.: Personal communication. 3. Combined results of 18 clinical investigators, Medical Records, Ayerst Laboratories. 4. Kubista, R. A., and Derse, P. H.: Antibiotics & Chemotherapy, to be published. 5. Knight, S. G.: J. Invest. Dermat. *28*:363 (May) 1957. 6. Knight, S. G.: Antibiotics & Chemotherapy *7*:172 (Apr.) 1957.

Ayerst

AYERST LABORATORIES
New York 16, N.Y. · Montreal, Canada
5947

LICENSED BY WISCONSIN ALUMNI RESEARCH FOUNDATION

Patent Applications Pending



Now–

"A BACTERIOSTATIC BATH"*

Controls Oropharyngeal Infections and Relieves Discomfort Quickly

Chewing ORABIOTIC releases a soothing flow of saliva laden with two locally potent and complementary antibiotics—*neomycin and gramicidin*—plus a topical analgesic, *propesin*, which is more effective than benzocaine.

NON-SENSITIZING AND NON-IRRITATING.

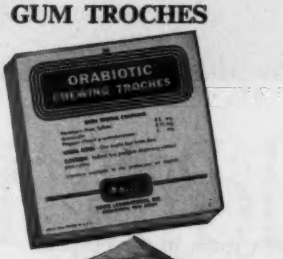
ORABIOTIC®

NEW ANTIBIOTIC-ANALGESIC CHEWING GUM TROCHES

for topical treatment or prophylaxis

For the relief of postoperative discomfort and the prevention of secondary hemorrhage following tonsillectomy. Valuable also as a topical adjunct to systemic treatment of bacterial infections of the mouth and throat.

EACH TROCHE CONTAINS: neomycin 3.5 mg., gramicidin 0.25 mg., and propesin 2.0 mg. IN PACKAGES OF 10 AND 20. One troche chewed for 10-15 min. q. 4h.



WHITE LABORATORIES, INC., KENILWORTH, N. J.

**Granberry, C., and Beatrous, W.P.: The Effect of an Antibiotic Chewing Troche on Post-Tonsillectomy Morbidity, E.E.N.T. Monthly (May) 1957.*

Doctors, too, like "Premarin."®

THE doctor's room in the hospital is used for a variety of reasons. Most any morning, you will find the internist talking with the surgeon, the resident discussing a case with the gynecologist, or the pediatrician in for a cigarette. It's sort of a club, this room, and it's a good place to get the low-down on "Premarin" therapy.

If you listen, you'll learn not only that doctors like "Premarin," but *why* they like it.

The reasons are fairly simple. Doctors like "Premarin," in the first place, because it really relieves the symptoms of the menopause. It doesn't just mask them — it replaces what the patient lacks — natural estrogen. Furthermore, if the patient is suffering from headache, insomnia, and arthritic-like symptoms due to estrogen deficiency, "Premarin" takes care of that, too.

"Premarin," conjugated estrogens (equine), is available as tablets and liquid, and also in combination with meprobamate or methyltestosterone.

Ayerst Laboratories • New York 16, N. Y. • Montreal, Canada

5842

REFLECTION ON CORTICOTHERAPY:

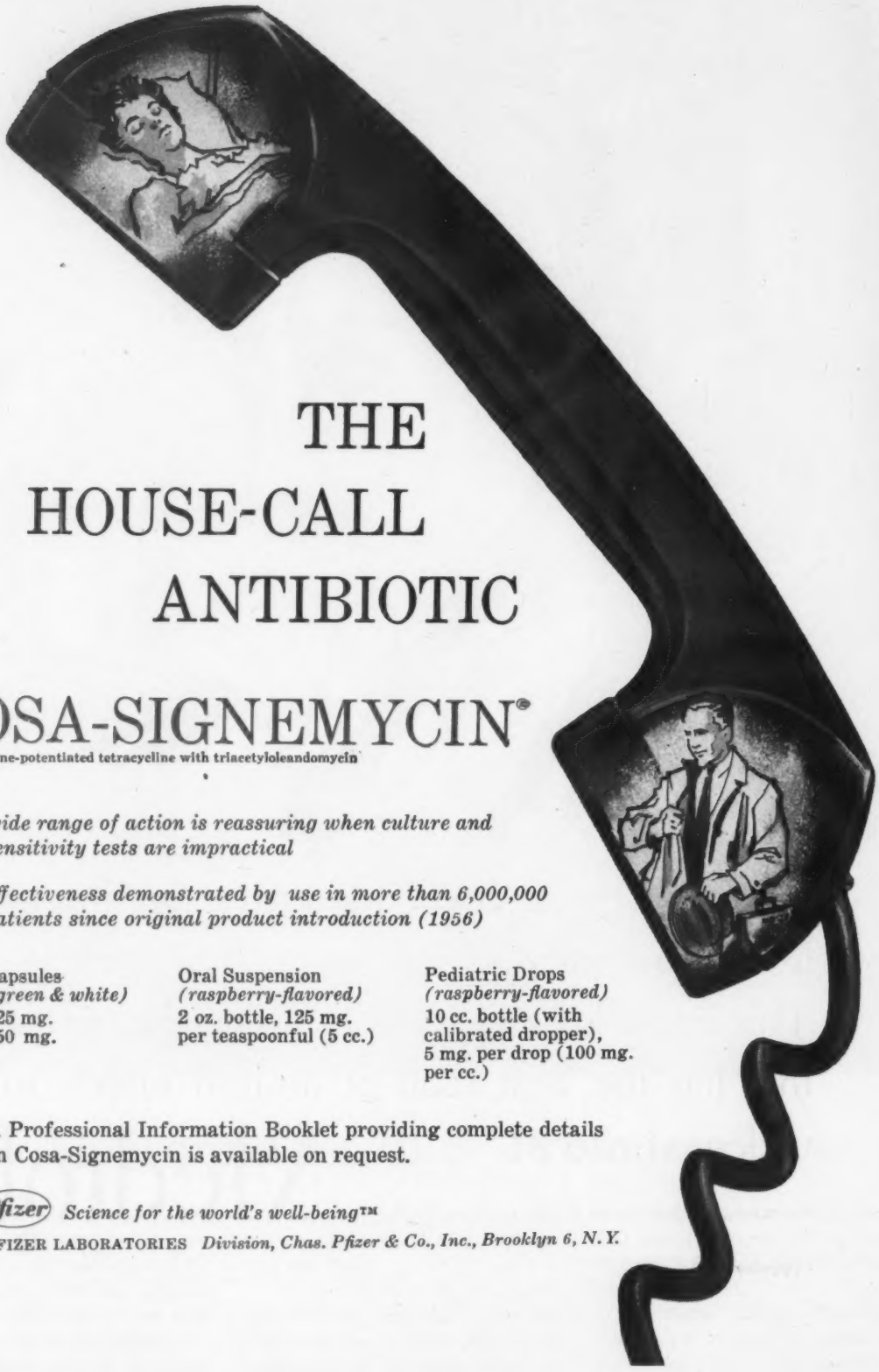
Particularly in corticotherapy, the intent is not to treat diseases, but to treat patients. This intent is best served by using the steroid that has the best ratio of desired effects to undesired effects:

Medrol*

the corticosteroid that hits the disease, but spares the patient

Upjohn THE UPJOHN COMPANY
KALAMAZOO, MICHIGAN

*TRADEMARK, REG. U. S. PAT. OFF. — METHYLPREDNISOLONE, UPJOHN



THE HOUSE-CALL ANTIBIOTIC

COSA-SIGNEMYCIN®

glucosamine-potentiated tetracycline with triacetyloleandomycin

- *wide range of action is reassuring when culture and sensitivity tests are impractical*
- *effectiveness demonstrated by use in more than 6,000,000 patients since original product introduction (1956)*

Capsules *(green & white)*	Oral Suspension *(raspberry-flavored)*	Pediatric Drops *(raspberry-flavored)*
125 mg. 250 mg.	2 oz. bottle, 125 mg. per teaspoonful (5 cc.)	10 cc. bottle (with calibrated dropper), 5 mg. per drop (100 mg. per cc.)

A Professional Information Booklet providing complete details on Cosa-Signemycin is available on request.

Pfizer *Science for the world's well-being™*

PFIZER LABORATORIES *Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y.*

a new Neisler Durabond® product

Rynatan® Expectorant keeps heads and chests crystal clear

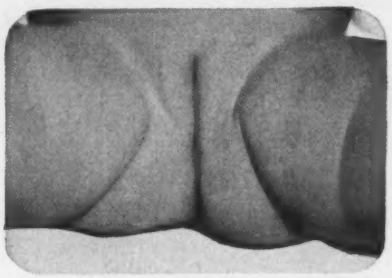
...all day or night with 1 oral dose and with a remarkable lack of drowsiness or any other side effect

The only long-acting non-narcotic, antitussive expectorant available, Rynatan Expectorant controls cough and bronchospasm, promotes expectoration . . . at the same time relieves upper and lower respiratory tract congestion . . . clears all air passages. And the Durabond Principle—a Neisler exclusive—assures smooth and sustained therapeutic action for hours with few if any side effects, because drug absorption is independent of intestinal motility, pH or other physiologic factors. The sympathomimetic amines present in the formulation also help offset any drowsiness from the antihistamine or sedative ingredients. Each 5 cc. of caramel-flavored suspension contains: carbetapentane tannate (non-narcotic) 30 mg.; ephedrine tannate, 5.0 mg.; phenylephrine tannate, 5.0 mg.; chlorpheniramine tannate, 2.0 mg.; and pyrilamine tannate, 12.5 mg. IRWIN, NEISLER & CO. · DECATUR, ILLINOIS

WHITE'S VITAMIN A & D OINTMENT

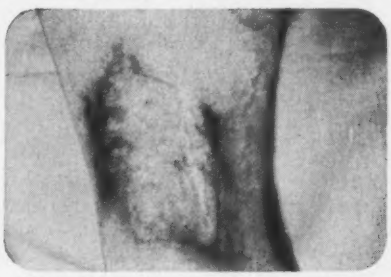
HEALS SOOTHES PROTECTS

Before application of White's Vitamin A & D Ointment—Typical diaper rash with excoriation of skin.



After application of White's Vitamin A & D Ointment at every diaper change—Diaper rash has completely disappeared within one week.

Before application of White's Vitamin A & D Ointment—Treatment-resistant varicose ulcer in elderly obese patient.



After daily treatment with White's Vitamin A & D Ointment—Completely healed ulcer photographed five weeks after the start of treatment with White's Vitamin A & D Ointment.

Before applications of White's Vitamin A & D Ointment—Severe pressure sore in area over greater tuberosity of femur.

After daily treatment with White's Vitamin A & D Ointment—The sore is now filled with granulation tissue and shows signs of re-epithelization at margins.

Supplied in 1½ and 4 oz. tubes; 1 lb. jars and 5 lb. containers.

WHITE LABORATORIES, INC., KENILWORTH, NEW JERSEY

908035

whatever the age, whatever the need—

VITAMINS BY ABBOTT

help make "good health" a "good habit"

filmtab **DAYALETS®** (Abbott's Multiple Vitamin Tablets): filmtab **DAYALETS-M®** (Abbott's Vitamin-Mineral Tablets): two extra-potent maintenance formulas—ideal for the "run-down" patient or as prophylaxis for those on a restricted diet.

filmtab **OPTILETS®** (Abbott's Therapeutic Multivitamin Formula): filmtab **OPTILETS-M®** (Abbott's Therapeutic Multivitamins plus Minerals): therapeutic formulas for the more severe deficiencies—excellent for use when bodily stresses and requirements are increased, as in periods of illness or infection.

filmtab **SUR-BEX® with C** (Abbott's B-complex with C): the complete B-complex formula with a therapeutic amount of ascorbic acid...especially useful during such periods as postoperative recovery.

. . . and it's nice to have them all in table bottles, too (at no extra cost). **In the golden table bottle:** Sur-bex w/C, 60's (shown); Dayalets, Optilets and Optilets-M, 100's. **In "apothecary" table bottles:** Dayalets-M, 100 & 250.

ABBOTT

end of the line...Abbott style

By the time these handsome bottles of Dayalets come off the line at Abbott, you can count no less than 25 separate assaying and inspection procedures—including a tablet-by-tablet check by hand! You can also include some refinements of manufacture that you don't ordinarily find in a nutritional product.

An example of these is our exclusive Filmtab® coating process. Several things distinguish it from other coating operations. For one, it is an anhydrous procedure—which helps materially to reduce deterioration. For another, the coating itself is microscopically thin—which helps to reduce bulk. There is no sugar in the Filmtab coating, and the final "seal" is perfect—no vitamin odor or taste, ever. The result to you is a compact, calorie-free tablet of unsurpassed stability . . . which any patient can swallow easily . . . and which won't stick or chip in the bottle.

VITAMINS
BY
ABBOTT
A PRODUCT
FOR EVERY
PATIENT
FOR EVERY
PURPOSE

®FILMTAB—FILM-SEALED TABLETS, ABBOTT; U.S. PAT. NO. 2,881,085

© 1959, ABBOTT LABORATORIES/NORTH CHICAGO, ILL. 908036

In the Treatment of Rheumatic Disorders Greater stability of maintenance dosage minimizes risks of hormonal imbalance

In Sterazolidin, the anti-inflammatory actions of prednisone and Butazolidin* are combined to permit lower effective dosage of each. Clinical experience has indicated that patients can be well maintained on this combination over prolonged periods with relatively low, stable dosage levels of each component, thus minimizing the problems arising from excessively high doses of corticosteroids. Other side effects have also been gratifyingly few. Antacid and spasmolytic components are contained in Sterazolidin capsules for the benefit of patients with gastric sensitivity.

Sterazolidin®: Each capsule contains prednisone 1.25 mg.; phenylbutazone 50 mg.; dried aluminum hydroxide gel 100 mg.; magnesium trisilicate 150 mg.; homatropine methylbromide 1.25 mg.

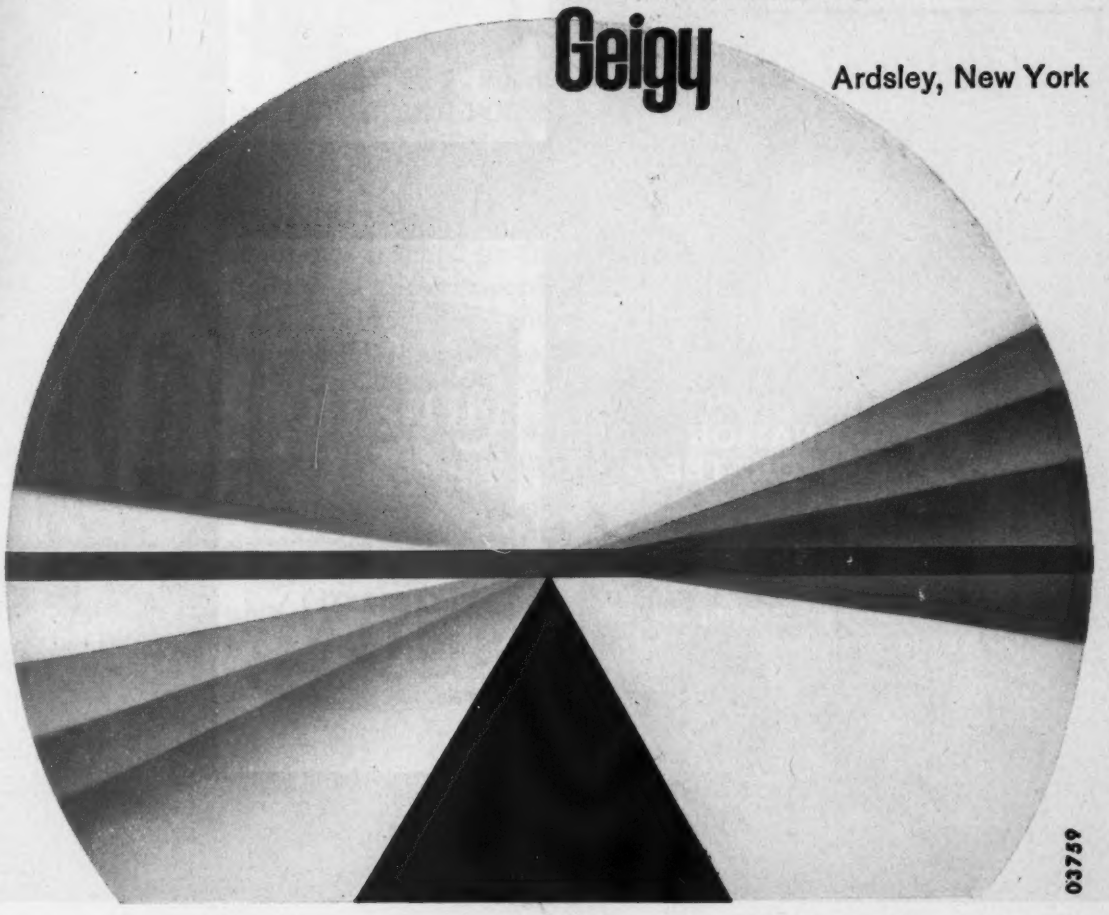
Detailed information available on request.

*Geigy's trademark for phenylbutazone—Reg. U. S. Pat. Off.

new **Sterazolidin®** Capsules

prednisone-phenylbutazone, Geigy

Geigy Ardsley, New York



03759

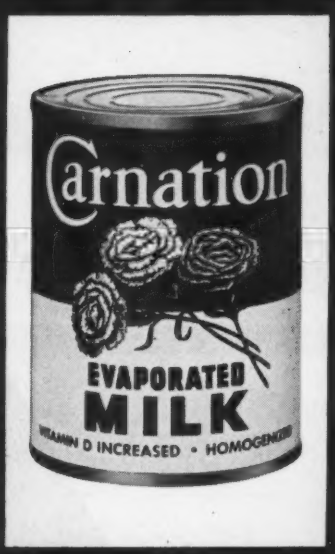
Now 2 ways to specify Carnation Evaporated Milk infant formula

1 NEW! CARNALAC

...when maximum convenience is desired. New Carnalac is Carnation Evaporated Milk with carbohydrate and Vitamin D added. Diluted 1:1, it provides the typical Carnation Evaporated Milk formula as usually prepared at home.

2 CARNATION EVAPORATED MILK

...when maximum formula flexibility is desirable for the baby... or when maximum economy is necessary for young parents.



ON THE SPOT TREATMENT

A TOPICAL FUNGICIDE FOR TOPICAL FUNGOUS INFECTIONS

Desenex attacks fungous infections caused by dermatophytes which affect the horny, keratinized layers of the skin.

Athlete's foot is a fungous infection of the skin involving the superficial layers that are not reached by the blood supply. A fungicidal agent, applied directly to these superficial fungous infections, brings the antifungal agent into intimate contact with the invading organism for the most effective method of treatment.

Desenex, a combination of zinc undecylenate and undecylenic acid – an unsaturated fatty acid with an 11-carbon chain – has resulted in more "clinical" cures . . . proved to be the least irritating, and the safest of all potent fungicidal agents.

ointment & solution & powder **DESENEX®** Maltbie

Maltbie Laboratories Division / Wallace & Tiernan Incorporated, Belleville 9, N. J.

PHOTOGRAPH, COURTESY DEPARTMENT OF DERMATOLOGY, UNIVERSITY OF PENNSYLVANIA PD-96

in
respiratory
infections...

the new alternative

MADRIBON

"Structurally a sulfonamide but clinically in a class by itself, Madribon exerts a high degree of effectiveness against a wide range of pathogens...."

G. A. Moore, paper read at Conference on Recent Contributions to Antibacterial Therapy, New York City, May 21-22, 1959.

"The relatively minor change in the normal fecal flora... indicates considerably less likelihood of superinfections ...than with many other chemotherapeutic agents."

S. M. Finegold, Z. Kudinoff and H. O. Kendall, *ibid.*

"As Madribon does not materially alter the bacterial population of the respiratory tract, there is no danger of overgrowth as with antibiotics."

P. Rentchnick, paper presented at the International Congress of Infectious Pathology, Milan, Italy, May 6-10, 1959.

ROCHE
LABORATORIES

In 25 years, antibacterials have progressed from the status of heroic therapy to universal medication. This development has brought into focus a number of unexpected problems relating both to bacterial and host response.

Shifts in bacterial flora—particularly of the respiratory, urinary and gastrointestinal tracts—pose entirely new therapeutic problems. The emergence of resistant strains of bacteria creates still another hazard. In addition, anaphylactic reactions often hamper critically needed therapy.

While this entire question of bacterial mutations and patient sensitization is undergoing continual intensive study and reorientation, the immediate clinical need is for a new alternative to control infection in today's patient.

A MODERN PROGRAM FOR THE CONTROL OF INFECTIONS

1.	In nonbacterial (presumably viral) upper respiratory infections	fluids, bed rest, antipyretics
2.	When the diagnosis is primary bacterial infection • when secondary bacterial invasion is a problem in virus infection • when sensitivity testing is not feasible	MADRIBON
3.	For problematic and fulminating infections	antibiotics

Backed by the fastest growing bibliography of any anti-infective agent, Madribon is already widely established as the new alternative because (1) it *quickly controls the infection*—in more than 90% of reported cases including some due to resistant strains; (2) it is *safe*—less than 2% side effects, generally of a mild nature; (3) it is *economical.*

For recommended dosage and precautions, consult product literature.

Supplied: MADRIBON TABLETS: 0.5 Gm, double scored, monogrammed, gold colored—bottles of 30, 250 and 1000. MADRIQID CAPSULES: 125 mg, gold colored—bottles of 100 and 1000. MADRIBON SUSPENSION: 0.25 Gm/teasp. (5 cc), custard flavored—bottles of 4 oz and 16 oz.

MADRIBON®—2,4-dimethoxy-6-sulfanilamido-1,3-diazine MADRIQID™ ROCHE®

Division of Hoffmann-La Roche Inc • Nutley 10 • N. J.

Victim of Overeating and "Oversitting"

Rx

BIPHETAMINE®

A 'STRASIONIC' RELEASE ANORETIC RESIN

- **10-14 Hour Appetite Curb**
- **10-14 Hour Mild Invigoration**
- **Predictable Weight Loss...**
  a comfortable 1 to 3 lbs. a week in 9 out of 10 cases

In many instances both appetite limitation and mild invigoration ('Biphetamine') are required to effect the balance between caloric intake and energy output necessary for predictable weight reduction and control. Since 'Strasionic' release is employed, the desired therapeutic action is uniform, predictable and comfortable.

Biphetamine may be prescribed for obese patients who are hypertensive, arthritic, diabetic, pregnant, menopausal, aged; and to reduce surgical risks. Use with initial care in patients hypersensitive to sympathomimetic compounds, in cases of coronary disease or severe hypertension.

- **Single Capsule Daily Dose 10 to 14 hours before retiring**

3 STRENGTHS

List No. 875
BIPHETAMINE®
'20' Resin
Each black capsule contains:
d-amphetamine ..... 10 mg.
dl-amphetamine ..... 10 mg.
as resin complexes

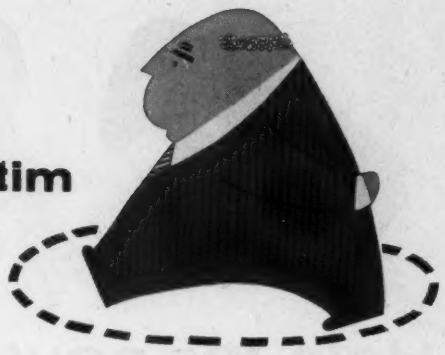
List No. 876
BIPHETAMINE®
'12½' Resin
Each black and white capsule contains:
d-amphetamine .....6.25 mg.
dl-amphetamine .....6.25 mg.
as resin complexes

List No. 895
BIPHETAMINE®
'7½' Resin
Each white capsule contains:
d-amphetamine .....3.75 mg.
dl-amphetamine .....3.75 mg.
as resin complexes

Rx Only. Caution: Federal law prohibits dispensing without prescription.

Biphetamine—made and marketed ONLY by **STRASENBURGH LABORATORIES** ROCHESTER, N.Y., U.S.A.

Originators of 'Strasionic' (sustained ionic) Release



Victim of Overeating

Rx NEW

Non-Amphetamine

IONAMIN™

A 'STRASIONIC' ANORETIC

PHENYL–*TERT.*–BUTYLAMINE RESIN

- **10-14 Hour Appetite Curb**
- **Predictable Weight Loss...**
  a comfortable .221 lbs. per day in average case

In many instances, appetite limitation only ('Ionamin') is required to effect the balance between caloric intake and energy output necessary for predictable weight reduction and control. Since 'Strasionic' release is employed, the desired therapeutic action is uniform, predictable and comfortable.

Ionamin may be prescribed for obese patients who are arthritic, diabetic, pregnant, menopausal, aged, to reduce surgical risks, and may be used with caution in hypertensive or cardiovascular disease.

- **Single Capsule Daily Dose 10 to 14 hours before retiring**

2 STRENGTHS

Rx Only.
Caution: Federal law prohibits dispensing without prescription.

List No. 904

IONAMIN™ '30'

Each yellow capsule contains:
phenyl-tert.-butylamine . . 30 mg.
as a resin complex

List No. 903

IONAMIN™ '15'

Each grey and yellow capsule contains:
phenyl-tert.-butylamine . . 15 mg.
as a resin complex

Ionamin – made and marketed ONLY by **STRASENBURGH LABORATORIES**
ROCHESTER, N.Y., U.S.A.

Originators of 'Strasionic' (sustained ionic) Release

NEW

Help for cough victims

Stop Cough 8-12 Hours with a Single Dose

Rx TUSSIONEX®

A 'Strasionic' Antitussive • Dihydrocodeinone Resin—Phenyltoloxamine Resin

- A Single Dose Controls Cough for 8-12 Hours
- Permits Natural Discharge of Mucous
- Uninterrupted Antitussive Action with Minimum Amount of Narcotic Through 'Strasionic' Release

TWO FORMS: Tussionex Thixaire™ Suspension • Tussionex Tablets

Each teaspoonful (5c.c.) or tablet provides 5 mg. dihydrocodeinone and 10 mg. phenyltoloxamine as resin complexes.

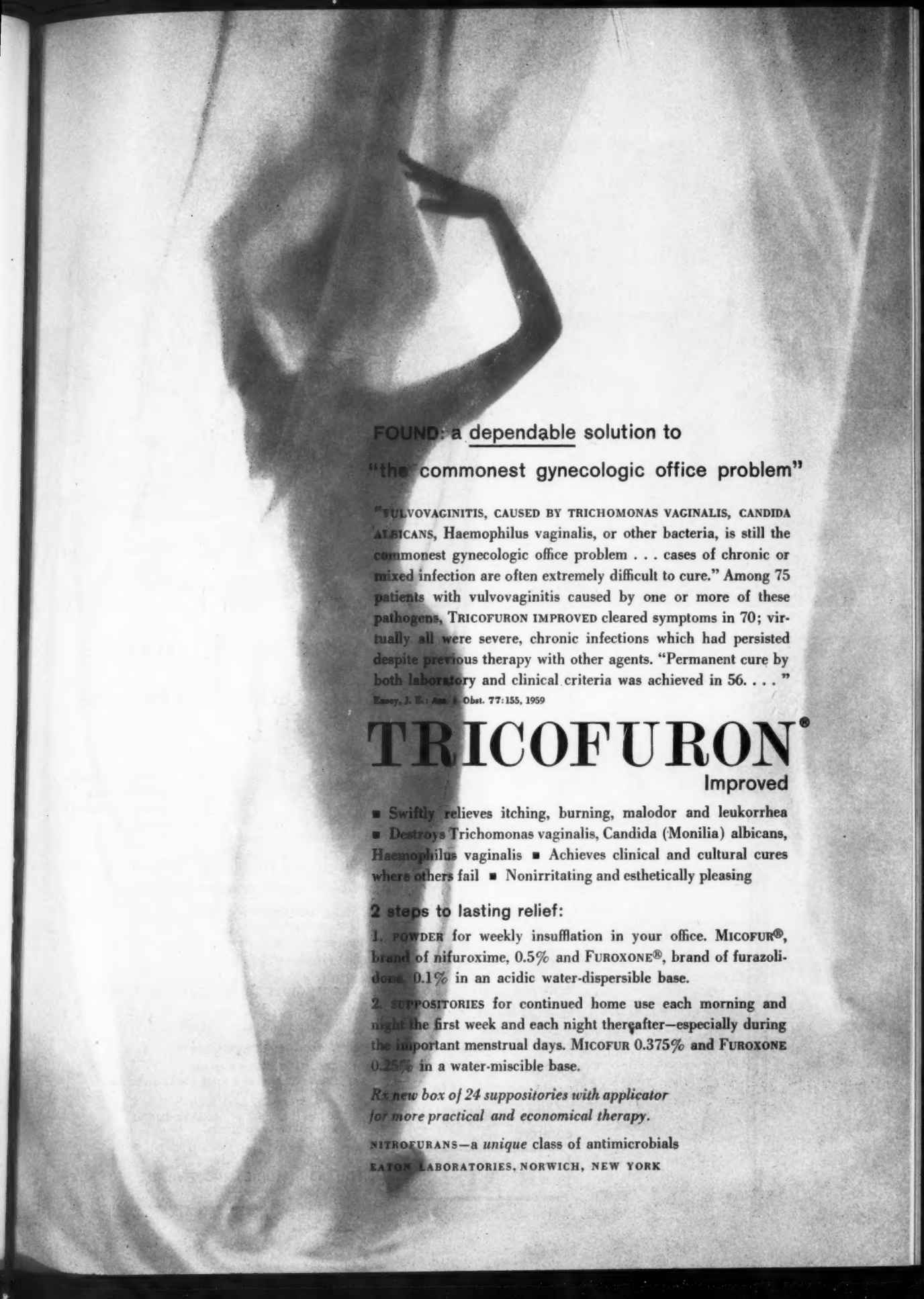
Dose: 1 teaspoonful or tablet q 12 h. Children under 1 year, ¼ teaspoonful q 12 h; 1-5 years, ½ teaspoonful q 12 h.

Rx only. Class B taxable narcotic.

Tussionex—made and marketed only by

STRASENBURGH LABORATORIES
ROCHESTER, N.Y., U.S.A.

Originators of 'Strasionic' (sustained ionic) Release



FOUND: a dependable solution to "the commonest gynecologic office problem"

"VULVOVAGINITIS, CAUSED BY TRICHOMONAS VAGINALIS, CANDIDA ALBICANS, Haemophilus vaginalis, or other bacteria, is still the commonest gynecologic office problem . . . cases of chronic or mixed infection are often extremely difficult to cure." Among 75 patients with vulvovaginitis caused by one or more of these pathogens, TRICOFURON IMPROVED cleared symptoms in 70; virtually all were severe, chronic infections which had persisted despite previous therapy with other agents. "Permanent cure by both laboratory and clinical criteria was achieved in 56. . . . "

Emery, J. E.: Am. J. Obst. 77:155, 1959

TRICOFURON®

Improved

■ Swiftly relieves itching, burning, malodor and leukorrhea ■ Destroys Trichomonas vaginalis, Candida (Monilia) albicans, Haemophilus vaginalis ■ Achieves clinical and cultural cures where others fail ■ Nonirritating and esthetically pleasing

2 steps to lasting relief:

1. POWDER for weekly insufflation in your office. MICOFUR®, brand of nifuroxime, 0.5% and FUROXONE®, brand of furazolidone, 0.1% in an acidic water-dispersible base.

2. SUPPOSITORIES for continued home use each morning and night the first week and each night thereafter—especially during the important menstrual days. MICOFUR 0.375% and FUROXONE 0.25% in a water-miscible base.

Rx new box of 24 suppositories with applicator for more practical and economical therapy.

NITROFURANS—a *unique* class of antimicrobials

EATON LABORATORIES, NORWICH, NEW YORK

everything under control— including the temperature

with **Tylenol®**

FIRST LIQUID PEDIATRIC ANTIPYRETIC/ ANALGESIC

"... a safe and effective agent in the control of fever at any age in contrast to other agents which are of known toxicity ..."

"... this drug [acetaminophen] has been used extensively by our group without ill effect."[1]

Tylenol® *Acetaminophen*

relieves pain and brings fever under control quickly, safely ... is well liked by children.

In colds, "flu," sore throats – ℞ Tylenol for prompt relief of fever, headache, general discomfort.

2 dosage forms:

TYLENOL ELIXIR
120 mg. (2 gr.) per 5 cc.; 4 and 12 oz. bottles.

TYLENOL DROPS
60 mg. (1 gr.) per 0.6 cc.; 15 cc. bottles with calibrated droppers.

McNEIL

McNEIL LABORATORIES, INC., PHILADELPHIA 32, PA.

1. Mintz, A. A.: Management of the Febrile Child, J. Ky. Acad. Gen. Pract. *5*:26 (Jan.) 1959.

PMB

"PREMARIN"® WITH MEPROBAMATE

200

FOR PROVEN MENOPAUSAL BENEFITS

The vast majority of menopausal women, especially on the first visit, are nervous, apprehensive, and tense. PMB-200 or PMB-400 gives your patient the advantage of extra relief from anxiety and tension, particularly when the patient is "high strung," under prolonged emotional stress, or when psychogenic manifestations are acute. Proven menopausal benefits are confirmed by the wide clinical acceptance of "Premarin," specifically for the relief of hot flushes and other symptoms of estrogen deficiency, together with the well established tranquilizing efficacy of meprobamate.

Two potencies that will meet the needs of your patients: PMB-200 — Each tablet contains conjugated estrogens equine ("Premarin") 0.4 mg., and 200 mg. of meprobamate. When greater tranquilization is necessary you can prescribe PMB-400 — Each tablet contains conjugated estrogens equine ("Premarin") 0.4 mg., and 400 mg. of meprobamate. Both potencies are available in bottles of 60 and 500.

Ayerst Laboratories New York16,N.Y.
Montreal, Canada

Meprobamate, licensed under U.S. Pat. No. 2,724,720

5916

2

New Effervescent Bulk Laxatives

everybody likes

CHILDREN • ADULTS • GERIATRICS

Both Effersyl and Effergel

EFFERGEL: **Each 7 Gm. white granular powder (approx. 1 rounded teaspoonful) provides:**

Sodium Carboxymethylcellulose .....2 Gm.

Di(acetylhydroxyphenyl)isatin .....5 mg.
(chemically similar to the active principle of prunes)

EFFERSYL: **Each 7 Gm. pink granular powder (approx. 1 rounded teaspoonful) provides:**

Psyllium hydrocolloid .....3 Gm.
the highly purified hemicellulose of the husk of the psyllium seed. (Plantago ovata, Forsk)

Di(acetylhydroxyphenyl)isatin .....3 mg.
(chemically similar to the active principle of prunes)

Both available in 4-ounce and 9-ounce bottles at all pharmacies. Write for tasting samples.

1

FOR THE CHRONICALLY
OR ROUTINELY CONSTIPATED

Effersyl

(PSYLLIUM WITH A MILD PERISTALTIC STIMULANT)

- More lubricating bulk and milder peristaltic stimulation combine to produce soft, formed stools.
- Sodium-free.
- A pink, refreshing, pleasant tasting effervescent drink assures patient cooperation.
- Granular powder form allows variable dosage.

DOSAGE:

Adults: 1 rounded teaspoonful in a glass of water morning and night, or as directed by physician.

Children 3 years and over: initially, 1 level teaspoonful in one-half glass of water upon retiring. Subsequent dosage to be adjusted according to results.

THE STUART COMPANY Stuart PASADENA, CALIFORNIA

2

FOR THE DIFFICULT OR
OBSTINATELY CONSTIPATED

Effergel

(CARBOXYMETHYLCELLULOSE WITH A PERISTALTIC STIMULANT)

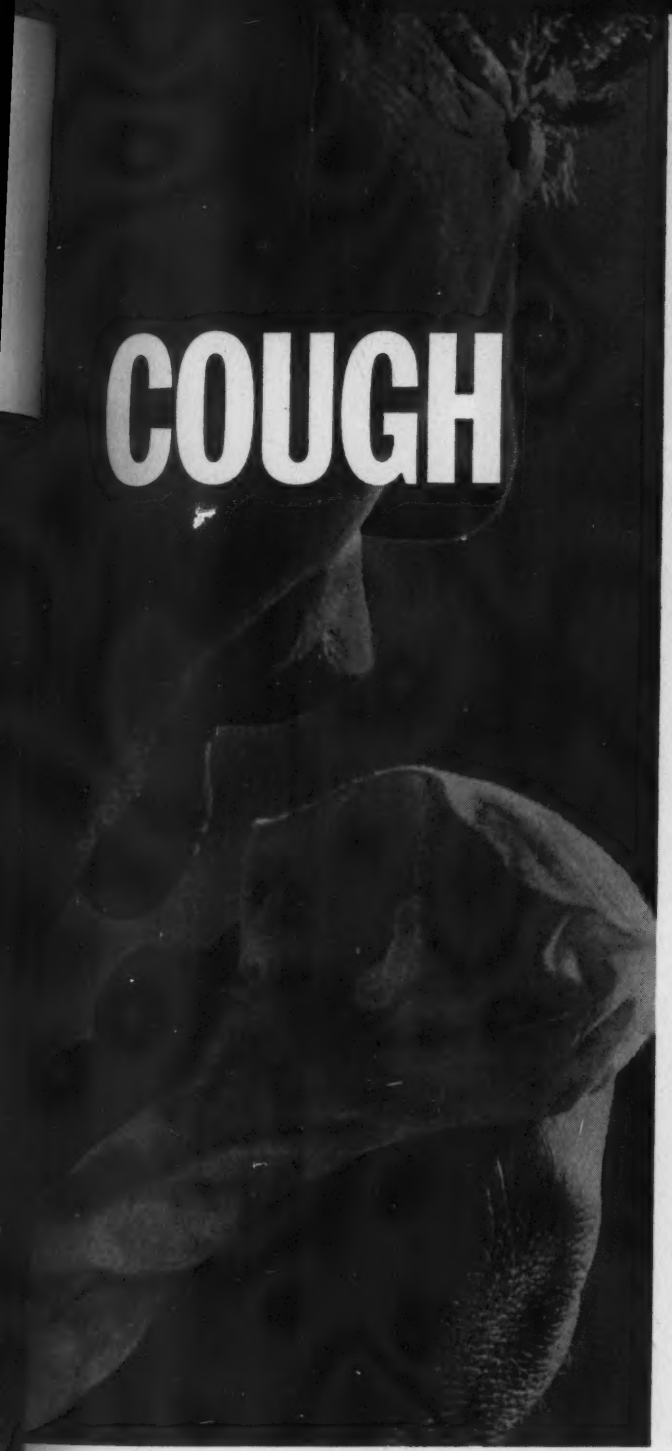
- Lubricating, non-irritating bulk produces soft, well-formed stools.
- A clear, refreshing, lemon-flavored effervescent drink assures patient cooperation.
- Granular powder form allows variable dosage.

DOSAGE:

Adults: 1 rounded teaspoonful in a glass of water daily. Stubborn constipation may require 1 rounded teaspoonful twice daily.

Children 3 years and over: initially, 1 level teaspoonful in one-half glass of water upon retiring. Subsequent dosage to be adjusted according to results.

COUGH
COUGH



STOPPED

ROMILAR CF raises the cough-reflex threshold in 15 to 30 minutes and sustains relief for as long as six hours—without undue side effects, without narcotic hazards or complications. ROMILAR CF treats the entire cough and cold complex: dextromethorphan (ROMILAR) **controls the cough,** chlorpheniramine **combats allergic manifestations,** phenylephrine **reduces nasal and bronchial congestion,** N-acetyl-p-aminophenol **relieves headache and myalgia** and **reduces fever.** Infection, allergy, bronchitis, excessive smoking—whatever the cause, prescribe ROMILAR CF for cough.

For convenient use away from home, also available in capsule form.

When only the specific antitussive action of dextromethorphan is indicated, prescribe ROMILAR—Syrup, Tablets or Expectorant.

Romilar® Hydrobromide—brand of dextromethorphan hydrobromide.

ROMILAR CF

SYRUP

the complete treatment for cough and other cold symptoms

ROCHE LABORATORIES • Division of Hoffmann-La Roche Inc • Nutley 10, N.J.

for routine cleansing... and a clear proctoscopic field[1]

FLEET® ENEMA

Disposable Unit

"Proctoscopies are included in our routine physicals. Of 1000 cases, prepared with FLEET ENEMA Disposable Unit, *only one* did not present a clear field."[2]

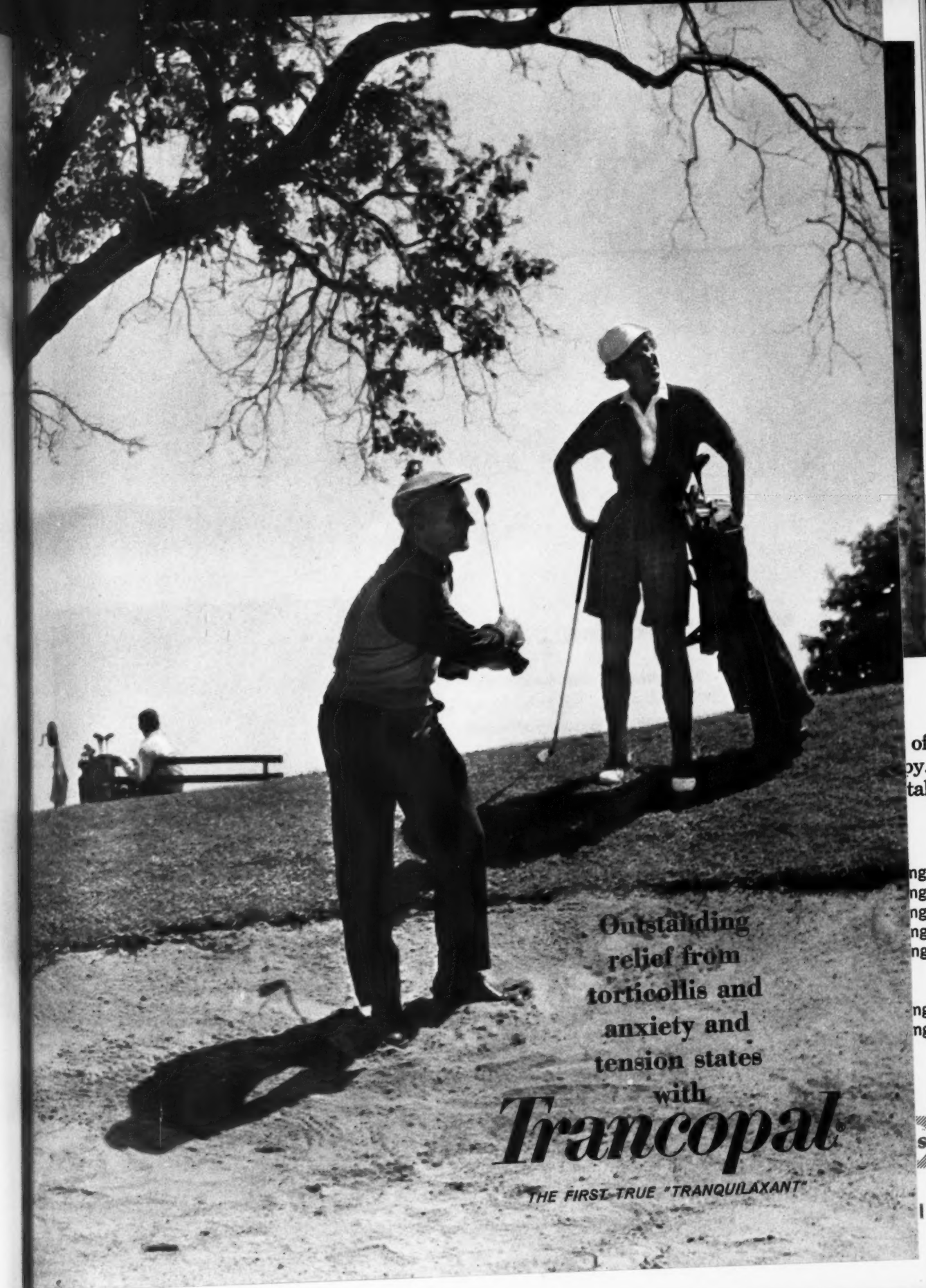
FLEET ENEMA Disposable Unit may be office-administered. The two-inch, anatomically correct, pre-lubricated rectal tube guards against possible injuries resulting from a longer tube.[3] Each ready-to-use 4½ fl. oz. unit contains, per 100 cc, 16 Gm. sodium biphosphate and 6 Gm. sodium phosphate . . . Pediatric Size 2¼ fl. oz.

Also gentle, prompt, thorough . . . PHOSPHO-SODA® (Fleet), a saline laxative of choice. Contains, per 100 cc, 48 Gm. sodium biphosphate, 18 Gm. sodium phosphate.

Fleet

C. B. FLEET COMPANY, INC., *Lynchburg, Virginia*

References: 1. Nesselrod, J. P., Postgrad. Med., *24*:123, 1958. 2. Rigney, T., (Paper to N. Y. S. Ind. Med. Soc. N. Y. C., 10/1/58.) 3. Frech, H. G. and Lanier, L. R., Am. Jl. Obst. & Gyn. *74*:146, 1957.


Outstanding
relief from
torticollis and
anxiety and
tension states
with
Trancopal
THE FIRST TRUE "TRANQUILAXANT"

Here is what you can expect when you prescribe

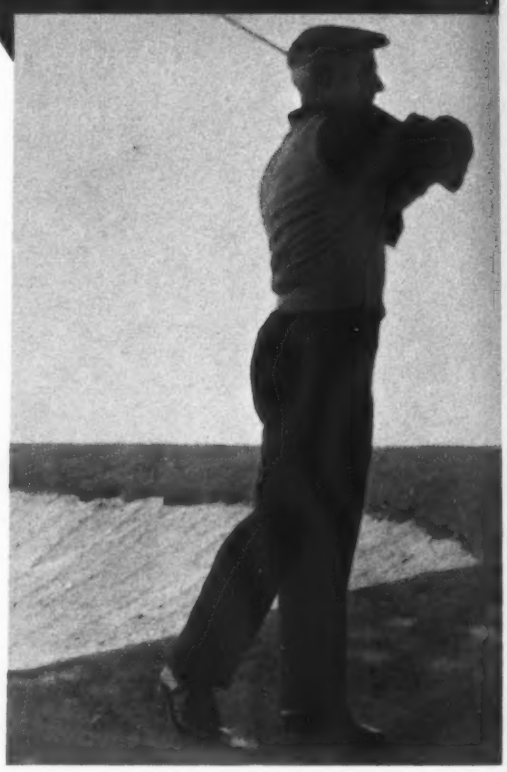
case profile no. 2840*

A 55-year-old man complained of a painful, very stiff neck on the left side. There was marked muscle spasm that seemed to involve primarily the trapezius muscle. He had a severe headache, with the pain radiating down the left side of the neck to the shoulder. There were no other findings on physical examination and results of routine laboratory tests were normal.

Trancopal was prescribed in a dosage of 200 mg. q.i.d. The first and second dose of Trancopal gave only moderate relief. However, after the third dose, there was marked relief of the stiffness of the neck, as well as the headache and shoulder pain.

After the fourth dose, medication was gradually decreased and was discontinued on the sixth day. One week later, the patient had moderate recurrence of the torticollis, and Trancopal was again prescribed in doses of 200 mg. q.i.d. The patient obtained complete relief in one day and no further treatment was required.

for torticollis



THE FIRST TRUE "TRANQUILAXANT"

Trancopal®

for anxiety and tension states

case profile no. 3382*

A 35-year-old woman, a professional model, had an acute, severe attack of anxiety. She was irrational and unable to eat, and was very restless.

Initial medication consisted of aspirin with codeine and later meprobamate. Neither was effective, and the patient's condition became worse. She had to be hospitalized because of the marked anxiety. Trancopal was then prescribed in a dosage of 200 mg. q.i.d., in addition to bed rest.

After the second dose of 200 mg. of Trancopal, the patient became calm and rational, and was able to eat. The dosage of Trancopal was gradually reduced to 100 mg. q.i.d. on the fourth hospital day, after which the patient was discharged and was able to return to her normal occupation.

**Clinical Reports on file at the Department of Medical Research, Winthrop Laboratories.*

Turn page for complete listings of Indications and Dosage.

THE FIRST TRUE "TRANQUILAXANT"

Trancopal

potent MUSCLE RELAXANT
effective TRANQUILIZER

Indications:

Musculoskeletal[1]	Psychogenic[1]
Neck pain (torticollis, etc.)	Anxiety and tension states
Low back pain (lumbago, etc.)	Dysmenorrhea
Bursitis	Premenstrual tension
Rheumatoid arthritis	Asthma
Osteoarthritis	Angina pectoris
Disc syndrome	Alcoholism
Fibrositis	
Ankle sprain, tennis elbow, etc.	
Myositis	
Postoperative muscle spasm	

Dosage: Adults, 100 or 200 mg. orally three or four times daily. Relief of symptoms occurs in fifteen to thirty minutes and lasts from four to six hours. The higher dosage is recommended for the treatment of patients in the acute stages of painful musculospastic conditions, and anxiety and tension states. Children (5 to 12 yrs.), 50 mg. three or four times daily.

Supply:

Trancopal Caplets®
100 mg. (peach colored, scored), bottles of 100.

New strength ▶ Trancopal Caplets
200 mg. (green colored, scored), bottles of 100.

"Chlormethazanone [Trancopal] not only relieved painful muscle spasm, but allowed the patients to resume their normal activities with no interference in performance of either manual or intellectual tasks."[2]

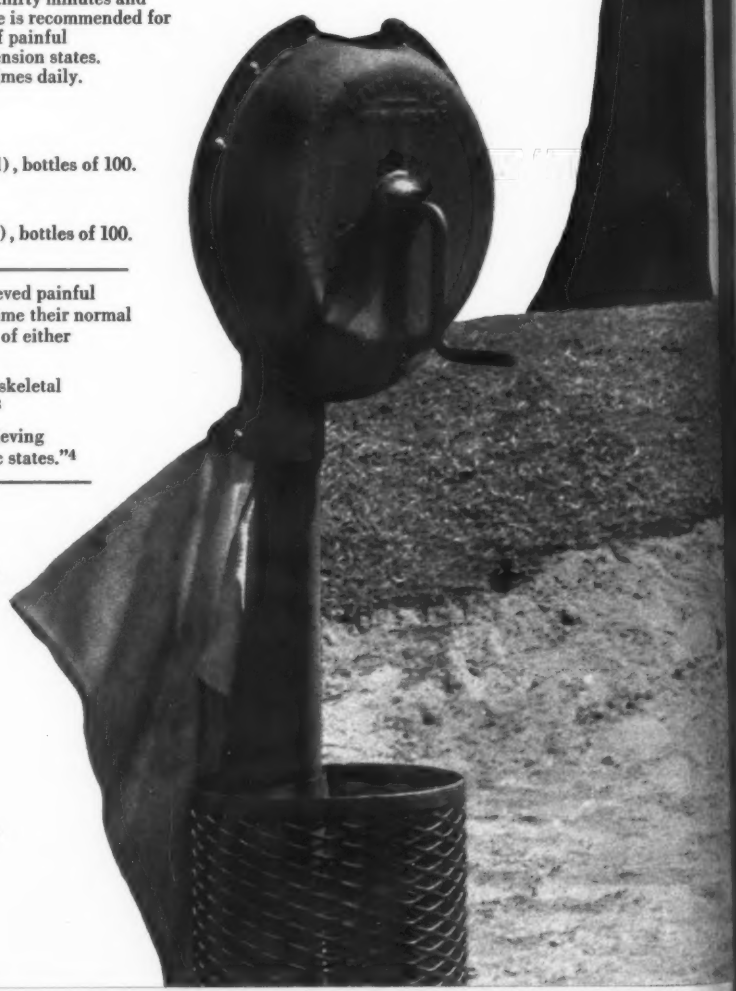
"The effect of this preparation in these cases [skeletal muscle spasm] was excellent and prompt . . ."[3]

". . . Trancopal is a most valuable drug for relieving tension, apprehension and various psychogenic states."[4]

1. Collective Study, Department of Medical Research, Winthrop Laboratories.
2. Lichtman, A. L. (N.Y. Polyclinic M. Sch. & Hosp.): Kentucky Acad. Gen. Pract. J. 4:28, Oct., 1958.
3. Mullin, W. G., and Epifano, Leonard (Long Island College Hosp.): Am. Pract. & Digest Treat. To be published.
4. Ganz, S. E. (New York, N. Y.): J. Indiana M. A. 52:1134, July, 1959.

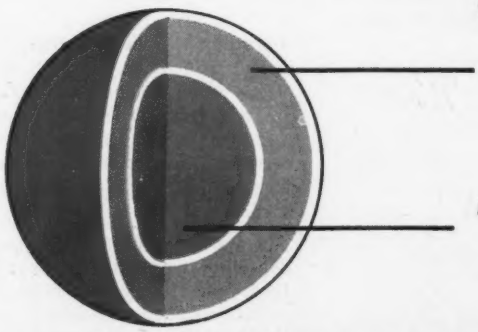
Winthrop LABORATORIES
New York 18, New York

Trancopal (brand of chlormezanone) and Caplets, trademarks reg. U.S. Pat. Off. Printed in U.S.A. 9-59 (1400M)



the complaint: "nervous indigestion"

the diagnosis: any one of several nonspecific gastrointestinal disorders requiring relief of symptoms by sedative-antispasmodic action with concomitant digestive enzyme therapy. **the prescription:** a new formulation, incorporating in a single tablet the actions of Donnatal and Entozyme. **the dosage:** two tablets three times a day, or as indicated.



the formula: *in the gastric-soluble outer layer:*

Hyoscyamine sulfate	0.0518 mg.
Atropine sulfate	0.0097 mg.
Hyoscine hydrobromide	0.0033 mg.
Phenobarbital (1/8 gr.)	8.1 mg.
Pepsin, N.F.	150 mg.

in the enteric-coated core:

Pancreatin, N.F.	300 mg.
Bile salts	150 mg.

DONNAZYME™

Rx Robins

A. H. ROBINS COMPANY, INCORPORATED • RICHMOND 20, VIRGINIA

A RATIONALE FOR THERAPEUTIC VITAMIN-MINERAL SU

Subclinical vitamin-mineral deficiency in chronic degenerative disease

Most degenerative disease changes appear to be related to disturbances of cellular nutrition.[1] Subclinical vitamin or mineral deficiencies often occur despite an adequate caloric intake, and the consequent impairment of enzyme systems may injure body tissues.[2] Considerable evidence indicates that the vitamin reserve is frequently lowered to a serious degree in the older age groups most susceptible to degenerative disorders.[3] Older persons also have increased requirements for such minerals as iron, iodine, copper, calcium and zinc.[4, 5, 6]

the importance of vitamins and minerals in Diabetes mellitus

The diabetic has a higher requirement for the vitamin B-complex (especially nicotinic acid, thiamine, B_{12}, and riboflavin) than the normal individual.[7] Great losses of calcium and potassium may occur during ketosis.[7] Low tissue zinc levels have recently been reported in a series of diabetic patients.[8] Metabolic deficiencies are frequently aggravated by diets which restrict or eliminate foods rich in essential co-factors.[9] Administration of more than normal requirements often produces a decided clinical improvement and may help to prevent neuropathic changes.[7]

the importance of vitamins and minerals in Digestive disorders

Peptic ulcer diets are often deficient in essential vitamins. Symptoms attributable to B-vitamin deficiency are commonly observed in patients on such diets.[10]

Liver damage leads to faulty vitamin metabolism, and cirrhosis often produces severe vitamin deficiency.[11, 12] Pollack and Halpern recommend daily administration of therapeutic vitamins to patients with hepatitis or cirrhosis.[11] Large amounts of zinc are also lost by the cirrhotic patient.[13]

Great care must be exercised to avoid excessive depletion of vitamins and minerals in ulcerative colitis, regional enteritis, and chronic diarrhea. Patients with extensive bowel resections may require up to six times the normal daily vitamin requirement.[14]

the importance of vitamins and minerals in Arthritic disorders

According to Spies,[15] nutritive failure is especially frequent in arthritic or rheumatic disorders. Some patients lose the desire to eat; some are too disabled to earn money to purchase required foods; still others are unable to perform all the necessary masticatory motions. Nausea and vomiting may prevent adequate absorption.

Therapeutic vitamins prevent or correct vitamin deficiency in the arthritic on an inadequate diet. In degenerative joint disease, vitamin therapy is recommended even when there is no demonstrable deficiency.[16] Mineral supplementation may help prevent the depletion of calcium and potassium that occurs during therapy with cer-

tain of the adrenal steroids. Iron[17] may be useful in preventing the anemia common in arthritis.

the importance of vitamins and minerals in other degenerative processes

Vitamins and minerals appear to play a role in many other degenerative processes associated with aging. Studies by Wexberg,[18] Jolliffe[19] and others indicate that many of the symptoms attributed to senility or cerebral arteriosclerosis respond with remarkable speed to the administration of vitamins. Pyridoxine and nicotinic acid may even play an important role in the prevention of atherosclerosis.

Vitamin or mineral deficiency may be an unrecognized factor in still other situations. As Kampmeier states:

"Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease. Are there 'subclinical' degrees of vitamin deficiencies to search for, now that frank deficiency states have become so rare at least in the United States?"[2]

References: 1. Kountz, W. B.: *Mod. Med.* 25:102, Aug. 1, 1957. 2. Kampmeier, R. H.: *Am. J. Med.* 25:662, Nov. 1958. 3. Overholser, W. and Fong, T. C. C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264. 4. Kountz, W. B.: *Indust. Med.* 27:537, Oct. 1958. 5. Kountz, W. B. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 252. 6. Carlson, A. J. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 80. 7. Duncan, G. G.: Diseases of Metabolism, 4th edition, W. B. Saunders, Philadelphia, 1959, p. 812. 8. Griffith, G. and Hegde, B.: *Illinois M. J.* 115:12, Jan. 1959. 9. Pollack, H.: *Am. J. Med.* 25:708, Nov. 1958. 10. Sebrell, W. H.: *Am. J. Med.* 25:673, Nov. 1958. 11. Pollack, H. and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D.C., 1952, p. 57. 12. Kark, R. M. in Wohl, M. G. and Goodhart, R. S.: Modern Nutrition in Health and Disease, Lea and Febiger, Philadelphia, p. 615. 13. Vallee, B. L. in Harrison, T. R.: Principles of Internal Medicine, 3rd edition, McGraw-Hill, New York, 1958, p. 474. 14. Warthin, T. A. and Monroe, K. E.: *M. Clin. North America* Sept. 1958, p. 1419. 15. Spies, T. D.: *J.A.M.A.* 167:675, June 7, 1958. 16. Solomon, W. M. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 627. 17. Ausman, D. C.: *Journal Lancet* 76:290, Oct. 1956. 18. Wexberg, E.: *Am. J. Psychiat.* 97:1406, 1941. 19. Jolliffe, N.: *J.A.M.A.* 117:1496, 1941.

help preserve tissue integrity and impede degenerative processes

Theragran-M

SQUIBB VITAMIN-MINERALS FOR THERAPY

Each THERAGRAN-M capsule-shaped tablet supplies:

Vitamin A	25,000 U.S.P. units
Vitamin D	1,000 U.S.P. units
Thiamine Mononitrate	10 mg.
Riboflavin	10 mg.
Niacinamide	100 mg.
Ascorbic Acid	200 mg.
Pyridoxine Hydrochloride	5 mg.
Calcium Pantothenate	20 mg.
Vitamin B_{12} Activity Concentrate	5 mcg.
Vitamin K	2 mg.
Vitamin E	5 int. units
Calcium	105 mg.
Iodine	0.15 mg.
Iron	15 mg.
Potassium	5 mg.
Copper	1 mg.
Magnesium	6 mg.
Manganese	1 mg.
Zinc	1.5 mg.

Dosage: 1 tablet daily or as recommended.

Supply: Family Packs of 180.
Bottles of 30, 60, 100, and 1000.

Available with vitamins only as

THERAGRAN

SQUIBB VITAMINS FOR THERAPY

Bottles of 30, 60, 100 and 1000 capsules and Family Packs of 180.

Also available: Theragran Liquid, bottles of 4 ounces; Theragran Junior, bottles of 30 and 100 capsules.

SQUIBB *Squibb Quality—the Priceless Ingredient*

"THERAGRAN"® IS A SQUIBB TRADEMARK

The picture of health—no "angina problem"

(2 years post-infarct)

...on Metamine Sustained, b.i.d.[1]

When anginal episodes persist in spite of E.C.G. evidence of "good recovery" from myocardial infarction, METAMINE SUSTAINED provides ideal protective medication. In fact, METAMINE SUSTAINED protects many patients refractory to other cardiac nitrates,[2] reducing the number and severity of anginal attacks, or eliminating them entirely. Dosage is easy to remember: "1 tablet on arising, and 1 before the evening meal."

Each tablet of METAMINE SUSTAINED slowly releases 10 mg. of aminotrate phosphate (LEEMING), the long-acting coronary vasodilator virtually free of nitrate side effects (nausea, headache, hypotension).[2] And, when you prescribe METAMINE SUSTAINED your angina patient will need less nitroglycerin and thus remain fully responsive to that vital emergency medication.

Supplied: bottles of 50 and 500 sustained-release tablets. Also: METAMINE (2mg.); METAMINE (2mg.) WITH BUTABARBITAL (¼ gr.); METAMINE (10 mg.) WITH BUTABARBITAL (¾ gr.) SUSTAINED; METAMINE (10 mg.) SUSTAINED WITH RESERPINE (0.1 mg.).

Thos. Leeming & Co. Inc. New York 17.

1. Eisfelder, H.W.: Case history 4/35. Personal communication. 2. Fuller, H.L. and Kassel, L.E.: Antibiotic Med. & Clin. Therapy, 3:322, 1956.

the
multivitamin
everybody likes

geriatrics

adults

the complete multivitamin in the pleasant tasting

SOFTAB® *form*

Mulvidren®

melts in the mouth
no water needed

teenagers

children

EACH TABLET CONTAINS:

VITAMINS

A	5,000 USP Units
D	1,000 USP Units
C	60 mg.
B_1	2 mg.
B_2	2 mg.
B_6	1 mg.
B_{12} as Ionex-12*	3 mcg.
d-Calcium Pantothenate	3 mg.
Niacinamide	10 mg.

*new Stuart Ionex-12 increases Vitamin B_{12} absorption five-fold.

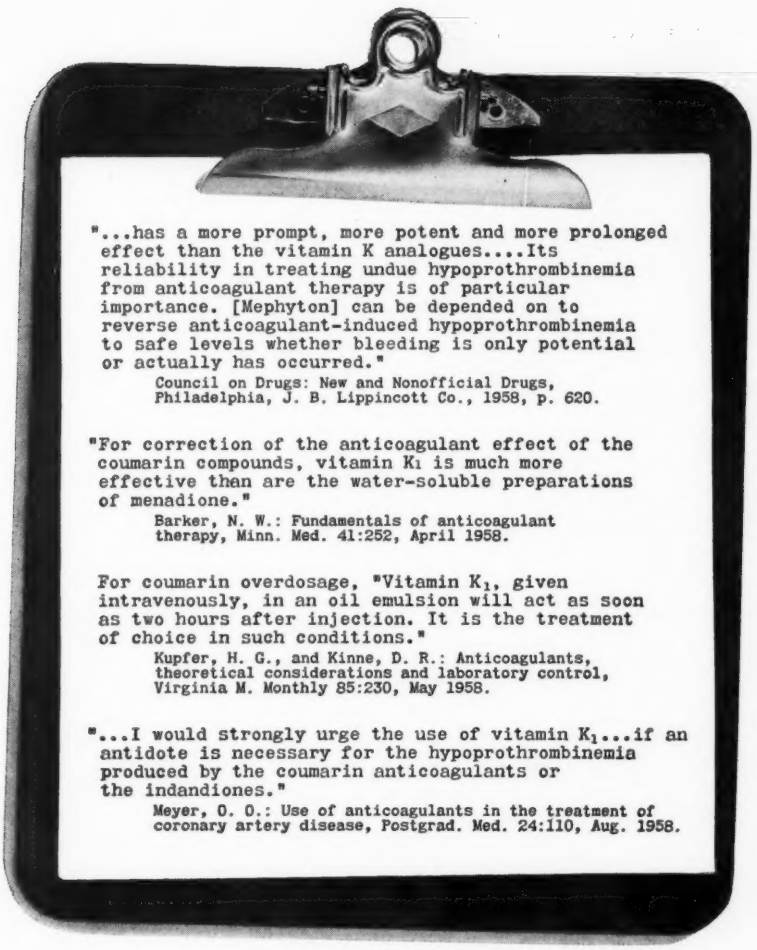
DOSAGE: 1 tablet daily or more as directed by physician.

AVAILABLE: Bottles of 50 & 100 tablets at all pharmacies.

Stuart

THE STUART COMPANY • PASADENA, CALIFORNIA

Consensus:
The preferred antidote for anticoagulant-induced hypoprothrombinemia is 'Mephyton' (vitamin K_1).


"...has a more prompt, more potent and more prolonged effect than the vitamin K analogues....Its reliability in treating undue hypoprothrombinemia from anticoagulant therapy is of particular importance. [Mephyton] can be depended on to reverse anticoagulant-induced hypoprothrombinemia to safe levels whether bleeding is only potential or actually has occurred."
Council on Drugs: New and Nonofficial Drugs, Philadelphia, J. B. Lippincott Co., 1958, p. 620.
"For correction of the anticoagulant effect of the coumarin compounds, vitamin K1 is much more effective than are the water-soluble preparations of menadione."
Barker, N. W.: Fundamentals of anticoagulant therapy, Minn. Med. 41:252, April 1958.
For coumarin overdosage, "Vitamin K1, given intravenously, in an oil emulsion will act as soon as two hours after injection. It is the treatment of choice in such conditions."
Kupfer, H. G., and Kinne, D. R.: Anticoagulants, theoretical considerations and laboratory control, Virginia M. Monthly 85:230, May 1958.
"...I would strongly urge the use of vitamin K1...if an antidote is necessary for the hypoprothrombinemia produced by the coumarin anticoagulants or the indandiones."
Meyer, O. O.: Use of anticoagulants in the treatment of coronary artery disease, Postgrad. Med. 24:110, Aug. 1958.

chemically identical with naturally-occurring vitamin K_1

Mephyton®

Vitamin K_1

Dosage: Orally, to modify anticoagulant effects: 5 to 10 mg. initially; 15 to 25 mg. for more vigorous action. Intravenously, for anticoagulant-induced bleeding emergencies, 10 to 50 mg.; may be repeated as indicated by prothrombin time response. (Some clinicians advise their patients to keep a supply of tablets on hand at all times; if gross bleeding occurs, the patients are instructed to take 10 mg. and phone the doctor.)

Supplied: Tablets, 5 mg.; bottles of 100. Emulsion, each 1-cc. ampul contains 50 mg.; boxes of 6 ampuls.

MEPHYTON is a trademark of Merck & Co., Inc.

MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

antibiotic **resistant STAPHYLOCOCCI** are killed by

ZEPHIRAN®

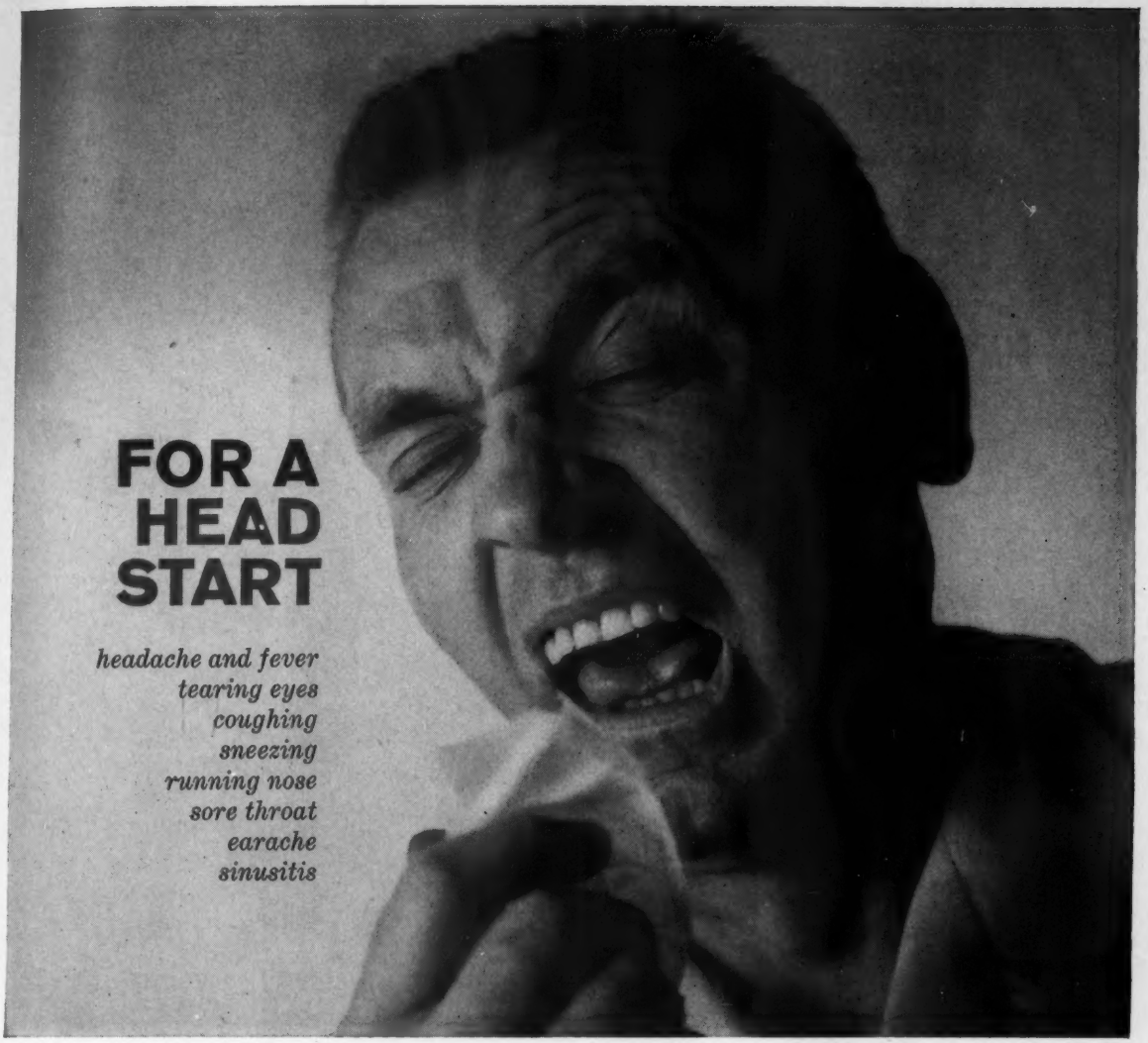
in seconds

USE ZEPHIRAN TO HELP CURB THE CURRENT MENACE TO HOSPITAL HEALTH

Preoperative preparation • Scrub-up • Surgical dressings • Wound irrigation • Sterile storage of instruments • Furniture, wall, and general sickroom disinfection • Laundry

Zephiran chloride, brand of benzalkonium chloride refined (to ensure quality). **WINTHROP LABORATORIES, NEW YORK 18, N. Y.**

1335M



IN UPPER RESPIRATORY INFECTIONS

COSA-TETRACYDIN*

CAPSULES

glucosamine-potentiated tetracycline—analgesic—antihistamine compound

- *Quick, symptomatic relief*
- *Effective in the control and prevention of secondary complications*

Each capsule provides:

Cosa-Tetracyn	125 mg.
phenacetin	120 mg.
caffeine	30 mg.
salicylamide	150 mg.
buclizine HCl	15 mg.

Additional information on Cosa-Tetracydin is available from the Medical Department of Pfizer Laboratories on request.

Pfizer *Science for the world's well-being™*

PFIZER LABORATORIES Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y. *trademark

WHEN THE TECHNIQUE CALLS FOR A DIAPHRAGM...
the trend is toward the NEW *Koro-Flex*

(CONTOURING)
DIAPHRAGM *worth investigation*

Six reasons why physicians are recommending Koro-Flex

1. Ease of insertion, automatic placement.
2. Reduces physician's fitting, instruction periods.
3. Develops patients' confidence.
4. Folds behind pubic bone with suction-like action, forming an effective barrier.
5. Locks in spermicidal lubricant, delivers it directly under and next to the os uteri.
6. Simple to remove.

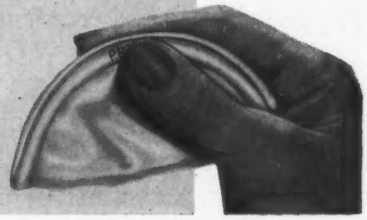
KORO-FLEX (contouring) Diaphragm acceptable, not only where ordinary coil-spring diaphragms are indicated but for Flat rim (Mensinga) type as well.

Suggest the convenient-economical KORO-FLEX COMPACT 60-95 mm

Feminine Clutch-style bag with zipper closure. Diaphragm, tube KOROMEX Jelly (3 oz.) Cream (1 oz. trial size).

KORO-FLEX

CONTOURING SPRING (ARCING TYPE)



Available in all prescription pharmacies. Write for descriptive literature. The coil spring diaphragm is available in the Koromex Compact.

HOLLAND-RANTOS CO., INC.
Manufacturers of KOROMEX Products
145 Hudson Street, New York 13, N. Y.

remember this patient
with musculoskeletal pain?

remember PAIN Zactirin®

Ethoheptazine Citrate (75 mg.) with Acetylsalicylic Acid (325 mg.),
Wyeth

Active now, pain relieved, inflammation controlled, *free of disturbing reactions. . . .* ZACTIRIN offers reliable analgesia plus anti-inflammatory benefits in a wide variety of joint and muscle disorders. It is non-narcotic and nonsteroid. Its relief of pain is equivalent to that of codeine. Yet it is well tolerated in both acute and prolonged use.

Myositis, fibrositis, myalgia, low back pain, ligamental strain, sciatica, bursitis, frozen shoulder, wryneck, osteoarthritis, rheumatoid arthritis, postoperative orthopedics

Supplied: Tablets, bottles of 48.

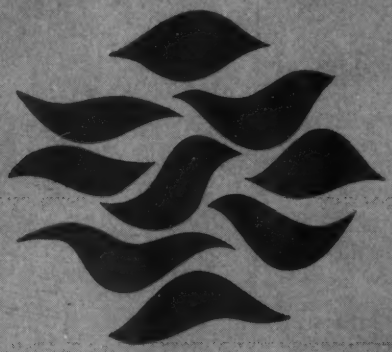
Wyeth®
Philadelphia 1, Pa.

allergic SWELLING

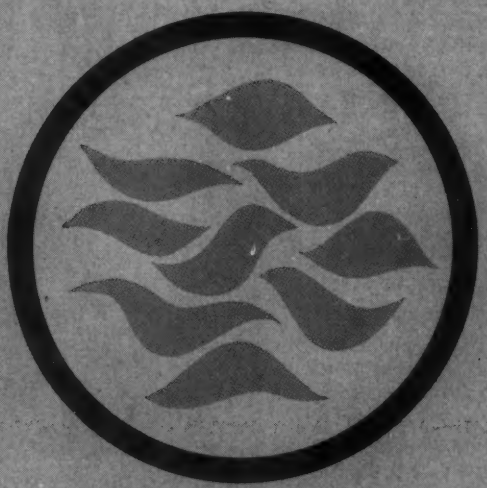
(PARABROMDYLAMINE MALEATE)

Dimetane® works

For your next patient with allergic swelling, itching or respiratory congestion associated with urticaria, Rx DIMETANE Extentabs® (12 mg.), Tablets (4 mg.), Elixir (2 mg./5 cc.) new DIMETANE-TEN Injectable (10 mg./cc.) or new DIMETANE-100 Injectable (100 mg./cc.).
A. H. Robins Co., Inc., Richmond 20, Virginia
Ethical Pharmaceuticals of Merit Since 1878



in eight years Novahistine hasn't cured a single cold—but it has brought prompt relief of symptoms to almost 8,000,000 patients*



With the introduction of Novahistine, a better and safer way to relieve symptoms of a cold became available to physicians. The synergistic action of the Novahistine formula...combining an orally-effective vasoconstrictor with an antihistamine...promptly clears the air passages and checks irritant nasal secretions. NOVAHISTINE can eliminate the problem of rebound congestion and damage to nasal mucosa in patients who misuse topical applications. • For long-lasting "Novahistine Effect" prescribe Novahistine LP Tablets...which begin releasing medication as promptly as conventional tablets but continue bringing relief for 8 to 12 hours. Two Novahistine LP Tablets in the morning and two in the evening will effectively control the average patient's discomfort from a cold. Each tablet contains phenylephrine HCl, 20 mg., and chlorprophenpyridamine maleate, 4 mg.

*Based on National Prescription Audits of new Novahistine prescriptions since 1952.

PITMAN-MOORE COMPANY Division of Allied Laboratories, Inc. • Indianapolis 6, Indiana

Novahistine LP†

LONG-ACTING

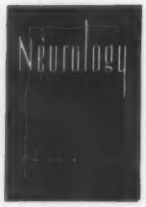
†Trademark

QUESTION:

What have authorities reported as to the efficacy of Fiorinal in tension headache?

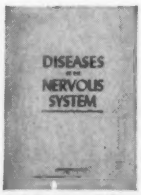
ANSWERS:

From the published reports of leading clinicians.



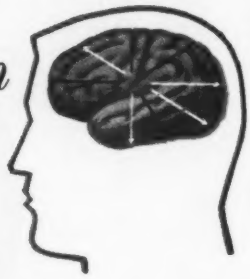
"The most effective symptomatic medication in the treatment of tension headache have been several analgesic and sedative combinations. One of the most effective is Fiorinal, which yielded relief in two out of three patients." *(Friedman, A. P., von Storch, T. J. C. and Merritt, H. H.: Neurology 4:773, Oct. 1954.)*

"In the treatment of tension headaches... [Fiorinal's non-narcotic action] offers a better opportunity for relief than some usually prescribed non-narcotic analgesics." *(Weisman, S. J.: Am. Pract. & Digest. Treat. 6:1019, July 1955.)*



"Fiorinal appears to be one of the most useful preparations to date for the relief of tension headaches. Easing of the head discomfort was accomplished by one or two tablets without any unpleasant side effects such as drowsiness or gastric upsets. In many cases Fiorinal appeared to temporarily relieve the discomfort from sinus trouble or acute respiratory infections." *(Kibbe, M. H.: Dis. Nerv. System 16:77, March 1955.)*

specific therapy for tension headache



Fiorinal®

relieves pain, muscle spasm, nervous tension

rapid action • non-narcotic • economical

Each tablet contains:
Sandoptal (Allylbarbituric acid N.F.X) 50 mg. (¾ gr.), caffeine 40 mg. (⅔ gr.), acetylsalicylic acid 200 mg. (3 gr.), acetophenetidin 130 mg. (2 gr.).

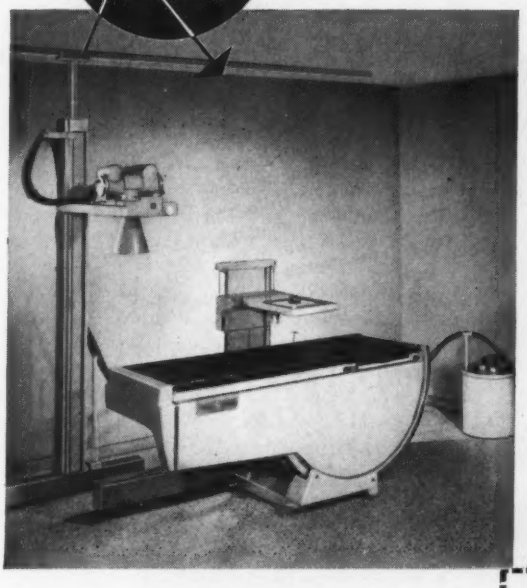
Dosage: **1 or 2 tablets every 4 hours, according to need, up to 6 per day.**

All this for one monthly fee

- Enjoy the most modern x-ray facilities . . . avoid obsolescence losses
- No surprise "extras" — covers periodic inspection, maintenance, replacement tubes, parts
- Freedom to add or replace equipment as improvements appear
- G.E. pays for insurance . . . assumes problem of collecting for equipment damage
- G.E. pays local property taxes

From This to This

without capital outlay



the difference is Maxiservice® rental

Here's the perfect answer for a cost-saving x-ray installation, easy to keep abreast of important new developments. G-E Maxiservice ties up *none* of your capital . . . eliminates trade-in losses — progress determines your time for exchange, not finances. In effect, you contract for *utility, convenience, flexibility* and *service,* not for just equipment.

For complete details, contact your G.E. X-Ray representative, or clip coupon below for your copy of our new Maxiservice booklet.

X-RAY DEPARTMENT
GENERAL ELECTRIC CO.
Milwaukee 1, Wisconsin, Room R-107

Send your new 12-page MAXISERVICE booklet to:

Name.....

Address.....

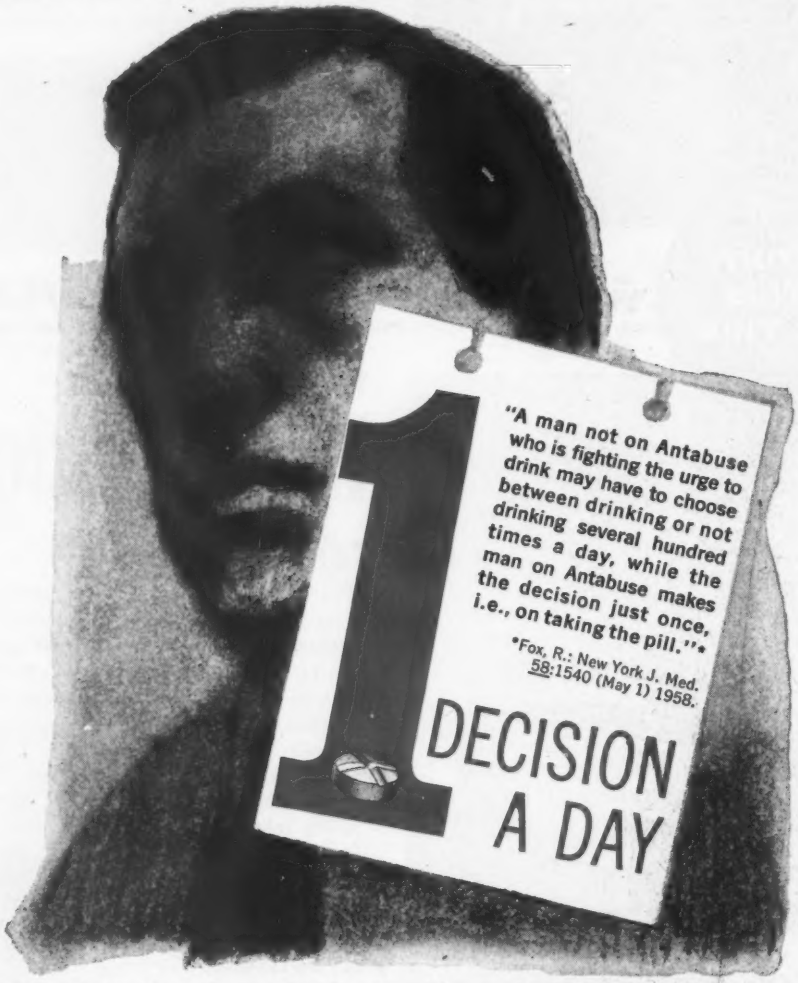
.....

Progress Is Our Most Important Product

GENERAL ELECTRIC

"ANTABUSE"® CLINICALLY PROVED IN ALCOHOLISM

a "chemical fence" for the alcoholic


"A man not on Antabuse who is fighting the urge to drink may have to choose between drinking or not drinking several hundred times a day, while the man on Antabuse makes the decision just once, i.e., on taking the pill."*
*Fox, R.: New York J. Med. 58:1540 (May 1) 1958.
1 DECISION A DAY

"ANTABUSE" helps the patient resist his compulsive craving for alcohol. With one dose a day he finds he cannot tolerate alcohol without experiencing extreme discomfort. By keeping the patient away from alcohol, "ANTABUSE" serves as a valuable adjunct to psychotherapeutic measures for the correction of underlying personality disorders.

"Antabuse," brand of DISULFIRAM (tetraethylthiuram disulfide), is supplied in 0.5 Gm. tablets (scored), bottles of 50 and 1,000. Complete information available on request.

Ayerst

AYERST LABORATORIES
New York 16, N.Y. • Montreal, Canada
5906

The function of the osteopathic profession: A matter for decision*

IRVIN M. KORR, Ph. D., *Department of Physiology and Pharmacology, Kirksville College of Osteopathy and Surgery, Kirksville, Missouri*

The theme of this Convention, "Unfolding Horizons in Osteopathic Medicine," is a challenging one. My assigned task as keynoter was to describe, from my viewpoint as a physiologist in an osteopathic college, some of the horizons that may reasonably be expected to unfold for the osteopathic profession. But I soon discovered that my task was an impossible one. The horizons we see at any given moment are determined by the places where we stand and the directions in which we face, and the number of possible horizons is infinite. But the only horizon that unfolds is the one toward which we move and then only as long as we move toward it. Your profession now stands on many platforms and faces in many directions, frustrated and uncertain about the future because its available resources cannot support movement in all of its present directions. From which of the many platforms and in which of the many directions is your profession to seek its unfolding horizons? One thing is certain: Unless this decision is made very soon, the osteopathic profession may look toward many horizons, but none that unfolds.

The only possible course—one that has any hope of success—is one to which the profession can, with unity and conviction, commit itself, and in which every segment can find its role. The decision, therefore, must be an organized decision.

For obvious reasons, the decision must be one in which society can feel a stake and to which it can wholeheartedly and generously commit itself. You cannot realistically ask society, as you have tried to do, to commit itself before you do; and without society's commitment, no course can be long pursued and no horizons unfolded. Society's judgment, therefore, must await your decision.

You have before you, then, a momentous and urgent decision: What do you wish your profession's contribution to society to be? I emphasize "profession's contribution" because the profession is far more than an aggregation of physicians and institutions, just as a human being is far more than the sum of his body parts. Its responsibilities are far greater than the sum of your individual responsibilities, just as human life is more than the function of organs. I repeat, unless the profession's function is soon established and the profession committed to it, all of its present roads are short ones and the theme of this Convention is but an idle phrase expressing a vain hope.

Unfortunately, you are not ready to make the decision, and some preparation is necessary. Three steps are required:

1. You must become aware of the *need for decision.* There is little in the present course of your affairs that reflects a deep, pervasive awareness that a deliberate decision on the right course needs to be made. There is, instead, the implied conviction that of all the present conflicting courses the right one will somehow eventually prevail.

2. You must examine and understand the *nature and scope of the decision.* While you make many decisions (and many more will be made at this Convention), none, since the one that marked your founding, has been as epochal in character as the one that now awaits your deliberation.

3. You must *organize for decision.* While your organizations make many decisions your profession is not now organized to make one of this character.

I propose, therefore, to examine with you (1) some of the reasons why this decision needs to be made and how the need came about; (2) the character of the decision; and (3) how it is to be made. Finally, I shall propose a horizon for your unfolding.

*Based on the keynote address of 63rd Annual Convention of the American Osteopathic Association, July 13, 1959, Chicago, Illinois.

Need for decision

Each of the existing professions has evolved to meet some social need which is itself the product of social, cultural, and technologic evolution and whose essential character is generally understood by society. In the course of its evolution each profession has been charged by society with the meeting of that need, which becomes its characterizing function. Society imposes regulation while at the same time giving protection and support. In general, therefore, professions do not need to decide what their respective functions shall be, but only how they are to be carried out.

Uniquely, the osteopathic profession did not evolve, nor was the need one generally understood by society. Instead, it arose *de novo* and self-appointed, so to speak, to a task which the profession itself declared and defined and which it alone understood, and to meet a demand which it alone recognized.

The profession's founding and self-appointment were marked by the chartering of the first osteopathic college in 1892. Its self-defined task was to teach and to put into practice principles and methods which it believed would "improve our present system" of medicine. Having found the existing medical professions unreceptive to these principles and methods, the founders decided to establish a profession which *would* test, develop, and apply them. It has been, from the beginning, an uphill struggle, in which you have had minimal support from society and unrelenting opposition from powerful organizations and professions. Nevertheless, in the intervening 67 years you have established yourself as a strong, independent profession, one of the two surviving medical professions in this country—and potentially a most powerful force for good in society. At tremendous cost to your own human and material resources you have trained and educated yourselves and each other, built your own educational and clinical institutions, and established a profession of 13,000 physicians serving millions of persons. You have been awarded the rights to practice as fully qualified physicians and to create as many others as you can, more or less in your own image. Your profession now has a powerful voice which is heard with far greater effect than one would expect from your numbers. The public increasingly seeks, and gratefully receives, the services of osteopathic physicians. Few recognitions and privileges remain to be won; indeed, the withholding of recognition, approval, and privilege now raises more questions in the public mind about the objectivity and the motives of the withholder than about the competence of osteopathic physicians. In all, this has been an immense achievement—unmatched in the history of professions.

The horizons we see at any given moment are determined by the places where we stand and the direction in which we face, and the number of possible horizons is infinite. But the only horizon that unfolds is the one toward which we move and then only so long as we move toward it

What, then, is your problem? And why is it necessary again to decide and declare the reasons for your profession's existence?

Your major frustration, as you identify it, is the lack of resources to do all the things you now feel yourself able to do, in the quality and on the scale to which you aspire. In other words, the rights, recognitions, and privileges you have been awarded are largely permissive—the removal of discriminatory obstacles. Society still gives little of the positive support it gives to the functions and institutions of other professions, through taxes, major philanthropy, substantial endowments, and other specifically designed provisions. While society gratefully accepts the services offered by osteopathic physicians, and willingly pays for each service, it still feels little or no obligation to the osteopathic profession or to the institutions which are its fountainhead. After 67 years, a vast amount of your effort continues to be expended in the quest for their support.

These *are* formidable obstacles, more obstructive to your progress, and even your existence, than ever before. But they are now far more of your own creation and perpetuation, and therefore far more subject to your removal, than you seem to be aware. It is beyond debate that you have established yourself as a profession. But it is time—long past time—to ask again, "For what?" For what have you fought this long, hard, uphill struggle to establish yourself? For what have you established a new profession? You find yourself able to answer only in terms of the services delivered by individual physicians and their clinics and hospitals. But where is the answer that speaks for the profession? What do you wish to do together? Because there is no ready answer to this question, the osteopathic profession itself debates whether it has a function of its own and a reason for separate existence, yet wonders why society feels no compelling sense of responsibility for its maintenance. Unless you soon decide what the function of the osteopathic profession is—a decision no other profession is called on to make—individual physicians may, for a while, continue to prosper (such is the demand for medical service), but the profession will atrophy and vanish for want of a function.

Why is there no longer a ready, clear, unequivocal answer to the question, "What is the function for which you have established and maintained this profession?" Is there no longer a need for the function it once "professed"? On the contrary, it seems to me that you have been so long and so deeply absorbed in establishing yourself that you have forgotten for what, you no longer ask for what, and,

more than you are aware, rights, recognitions, and approval have become ends in themselves. Being has become more important than becoming. Unfortunately, existence of the profession is not in itself reason for existence, and self-preservation is in itself not a function. So deeply have you been engaged in what began as a struggle for the rights to practice and teach according to your own principles, and to such an extent have you won those rights by developing and demonstrating proficiency in the implementation of other principles, that your own have become a little vague, irrelevant, and even obstructive to your present ends. Though now possessed of a great voice, your profession asks, "What will win approval from whom?" more often than "What is right for us?"; and says those things which it believes are expected of it. So preoccupied with meeting the standards of others, it has virtually relinquished all responsibility for setting standards for itself. So much have you been preoccupied with building your professional engine, and a magnificent engine it is, that you have neglected to lay track, and now cannot quite recall where it was to go. Consequently, your major struggles today are not so much for society's approval of the engine, which has been approved and duly admired, as for the privilege of running it on the tracks of other professions, toward destinations of their choosing.

The grave problems that now beset you can only grow and multiply until your profession is committed to its own course, or until it is abolished. Indeed, some members of your profession—fortunately, only a few, but unfortunately a few in high places—find themselves so overwhelmed by these problems that they seriously propound this conclusion: That the osteopathic profession, at immense cost and sacrifice, established itself, won and maintained its identity for 67 years, so that it could, with a flourish, *dis*establish itself, surrender its identity, and return to oblivion! It is to be expected, of course, that like other movements in history, this one, too, has its "summer soldiers and sunshine patriots." But it is sad that a learned profession permits itself, because of its indecision, to countenance and even seriously debate such tragic nonsense!

Let us now examine how your gravest problems and some of your greatest obstacles arise from your own uncertainty regarding the function of your profession.

1. Having no clear image of the function of the osteopathic profession, as it has of others, society has had to define that function in terms which it does understand and regulate its performance according to criteria and standards with which it is familiar. Not being able, therefore, to define its stake in that function, society cannot define its responsibility in sharing the cost of the profession's separate maintenance and the cost of educating osteopathic physicians. You are reduced, therefore, to seeking support, in proportion to your numbers, for this or that service, this or that project or endeavor, or this or that institution or department. But society remains uncommitted to the profession as a whole.

2. Until the profession is committed to the contribution it proposes to make to society, it can have no consistent, reliable guide to the formulation of long-term policy. In effect, your profession endlessly debates how to carry out its function without a clear view of what that function is. Without such a guide, the only possible "policy" is expediency: That which will win approval for this or that activity, from this or that one of your many publics, at this or that time. Over a period of years, it was inevitable that everything, especially design, should have been sacrificed for diversification. As a result, the profession and its activities today reflect not so much your design as its many expedient adaptations to external, conflicting pressures—as the shape of a tree may reflect the prevailing winds and a rock, the forces that erode it.

3. The profession neutralizes its great strength and dissipates its resources in diverse and conflicting efforts because, without a clear view of its central functions and its primary objectives, it can have no dependable scale of values for assignment of priorities and for apportionment of its resources. Each area of professional endeavor competes with every other area of endeavor for investment and support, one siphoning off resources needed by the other. One area momentarily thrives while another, on which it ultimately depends, is permitted to starve. Investment in each area is made on its own merits at a given time, without regard for long-term, balanced development of all of them. The resulting imbalances can find only expedient correction in a zig-zag course.

Let me cite one such imbalance, rapidly increasing in severity and hazard. The area of your profession's largest investment today, far exceeding all others, is in hospitals. While in themselves, of course, highly desirable, the mushrooming of hospitals has siphoned off so much of your profession's resources that your colleges—your very source—go begging.[1] Conversely, the need of your hospitals for staff members and interns is rapidly outrunning the capacity of your colleges to produce them; even the raiding of the college faculties has become an accepted practice. One has an image of jet planes so fast and powerful that they continually outrace the tankers which are to refuel them in flight. Perhaps even more important than the quantitative aspects of this imbalance are the qualitative aspects. It is profoundly and adversely affecting the entire educational system of your profession, the professional orientation of its recruits and graduates, the quality of intern training, the geographic distribution of osteopathic physicians, the ethics of practice, the medical specialties—and most profoundly of all, the very function of the osteopathic profession. It is committing your profession to a course upon which it has not consciously decided.

This example of imbalance has many counterparts. The question, in each case, is not only what is the relative importance of the various areas and endeavors, but what, at a given stage along your course, is the correct balance among them? This cannot be determined until you have, as a profession, decided upon your course.

4. Because of its indecision, your profession has

. . . those members and segments of this profession who are deeply concerned about its course and its horizons, and they are very many, must find the way to exert their influence on the affairs of the profession and the plotting of its course . . . . you will need intellectual leadership no less than political leadership

inflicted upon its colleges a Babel of conflicting ideologies, principles, practices, and objectives, while demanding excellence in each. Pursuit of "completeness" has produced curricula which grow by accretion rather than by design. It has led more and more to diffuseness, to superficiality, to acquisition of unorganized masses of knowledge and technic, to sacrifice of perspective and unifying themes, and to neglect of essentials. Design of the central core of osteopathic education awaits the profession's commitment to its own horizons.

5. Until a commitment to your profession's mission is made, you can have no realistic basis for attracting recruits to your profession nor for describing their qualifications.

6. Just as you now give society little basis for defining its obligations to you, so have you insufficient basis for determining the full scope of your obligations to society.

7. Because you have not decided upon the particular contribution of your profession and made clear to yourselves and to society their special qualities, you are reduced to measuring your strength in quantitative terms—the numbers of your physicians, the numbers of your annual graduates, the numbers of hospitals and hospital beds, the numbers of specialties and specialists, the numbers of dollars, the ratio of D.O.'s to M.D.'s and of D.O.'s to the population, and so forth. The growing assumption that to prevail you must do so by sheer weight of numbers can only contribute to a growing sense of futility and the further expenditure of your meager resources in unrewarding ventures. You struggle to compensate for your minority position when you should be capitalizing on it.

8. For the same reasons there are misapprehensions about the *source* of your strength. Your profession appears to believe that its strength is to be found more in stamps of approval by self-appointed magistrates of medicine, who in their own minds are medicine, than in the public your profession serves, which is the ultimate judge and the source of your support. As a result, you often act as though you believed your strength is to be nurtured by mimicry, by cloaks of protective coloration, by compromise of principles, by organized compliance, by appeasement, and by adaptation to what is prescribed for you by organizations of another profession, rather than what is designed for you by yourself. Recent events loudly proclaim the futility of this approach. History reveals that oblivion is the fate of those who ask only "What is acceptable?" and not "What is right?"

These, then, are the real obstacles that beset you today, as you contemplate your past achievements with justifiable pride and your future course without certainty. They are engendered and perpetuated by your profession's noncommitment to a function of its own design. The commitment becomes more urgent with each passing moment; for the longer it is postponed, the more difficult does it become, and the more do you surrender the responsibility for making it.

It may appear that all that is required is a satisfying and resounding definition of the noun "osteopathy" and the adjective "osteopathic." On the contrary, it is your actions that give meaning to your terms, and not vice versa. Osteopathic medicine is not a celestial body that happened to come into being, subject to observation and description, but not to intervention. It is a product of human design and human creation. It is, therefore, continually subject to human design. Hence, osteopathic medicine is an item not for definition, but for decision. The question is not, "What is it?" but rather, "What do you propose that it become and that it do?" This is the decision before you. Let us now examine the nature of that decision—the criteria on which it is to be based.

Nature of the decision

Following are some of the considerations by which your profession must be guided in its selection of the horizons it proposes to unfold for society: the profession's long-term contribution. In part, they are suggested by the foregoing symptoms of indecision.

1. The contribution must fill a social need, one in the limitless sphere of human health.

2. The need must be one which is not met or likely to be met by any other profession, however large the areas of overlap and collaboration with other professions.

3. The contribution must be of such scope, character, and enduring value as to justify—indeed, demand—the existence, growth, and development of the profession.

4. It must be of such value as to merit society's continuing and generous support, particularly of the institutions in which the contribution is developed, taught, and delivered.

5. It must be one which can unite the profession, to which the profession can unreservedly commit itself, and in which every segment can find its most gratifying role.

6. It must be within your province and within your realizable power. It must emerge therefore from your history, experience, character, and insights as a profession, from your own interpretations of society's needs and from your own determination of the path to their fulfillment.

7. It must provide comprehensive design for the

profession's total effort, for its development, for the acquisition and utilization of its resources, for the education of its physicians, and for their practice. It must provide guidance in the formulation of policy and in the definition and fulfillment of the profession's obligations to society.

Organizing for decision

Already so well organized for many kinds of decisions, you may wonder why it should be necessary to organize in particular for this one. For this reason: This is a decision that you are not now organized to make. This is not just another political or organizational decision to be recorded, proclaimed, or filed as merely another resolution, a new by-law, a new code of ethics—or even a new set of objectives for the Association. It is a social, scientific, intellectual, philosophical, technical, and medical decision of such comprehensive scope that it would henceforth govern the making of all other decisions. It is not one to be assigned to some committee, some department, or some bureau; it is one to be made by the entire profession and its institutions. It is not an aye-or-nay issue to be resolved by parliamentary procedure, in periodic sessions of chambers and councils, or in smoke-filled caucus rooms, and to be legislated into existence by majority vote. Rather, it is one to be continually developed, according to searching examination and re-examination of human needs and of this profession's share in the meeting of those needs. This is a decision on long-term directions of development, to guide all your efforts, at every level; one which will give design to your life as a profession.

Tne decision I am proposing is not, "What will serve the profession best?" but, "What and how will the profession serve best?" Organizational decisions made without regard for the central function of the profession can in the long run settle nothing, and at best bring only illusory and passing advantages to the profession. In effect, your professional organizations are preoccupied with secondary procedural issues, while the primary issues and objectives have yet to be identified; with means to the end before the end has been decided. And yet, it is these secondary decisions which today determine the profession's course and its future history. Beautifully organized for decisions on tactics, your profession has yet to organize for decisions on basic strategy.

In considering how to organize for this decision, two things are clear. First, *those members and segments of this profession who are deeply concerned about its course and its horizons, and they are very many, must find the way to exert their influence on the affairs of the profession and on the plotting of its course.* Second, *you will need intellectual leadership no less than political leadership.* Leaders are required who are qualified to identify and weigh the clinical, scientific, social, and professional—as well as the political and economic—elements that are involved. It is a matter for your serious attention that for want of appropriate forums many of your greatest and wisest physicians can have little influence on your profession's course. For such a decision you also need the active, and perhaps even the dominant, participation of your educators, for it is they, in the long run, who give meaning to your decisions, through the qualifications, attitudes, and perspectives they inculcate in the physicians they put into society's service each year. But even their function is now more determined by political considerations than it should be and more than we like to admit. Educational process must be freed of political influence.

A strong academic wing of your profession, centered around but not limited to your colleges, still needs to be developed. Its chief function would be the continual examination and re-examination of all the issues and elements that determine your obligations to society and the paths to their fulfillment. It is these considerations that should guide the affairs of the profession and determine the tactics and the weapons of organizational warfare with which to strengthen yourself in society's behalf.

The horizons for your unfolding

Design • In the foregoing discussion, the word "design" has appeared prominently several times. In considering the function of the profession our concern is not with the changing instrumentalities, procedures, and methods of health care and of professional function. Rather, it is with the total and enduring design according to which they are selected, developed, applied, and replaced. Our concern is with the total rationale that guides the use of the physician's skills and of the profession's resources. While in itself relieving no pain and curing no disease, design, rationale, or medical philosophy is, consciously or not, a ubiquitous and essential component in the theory and practice of medicine, a part of every diagnosis and every treatment.

While medical system—an expression which conveys my meaning better than any other—transcends the individual aspects, agents, agencies, and even the professions of health care, it is the total framework that incorporates and unites them all. It determines the degree and the quality of their integration into a functional whole, the design behind that integration, the purpose of its operation, its effectiveness, and the direction of its progress. System can, of course, never be stronger than the technical components available to it at a given time, and yet in its continual unfolding it reshapes those components and reveals the places, and the specifications, for new ones. Though the component knowledge and methods may change, the system they serve may remain the same system—in the sense that a river remains the same river, and a man the same man, while their substance continually changes. It connotes, whether or not they are explicitly stated, the central strategies of medical practice, the objectives, the criteria for success, the perspectives, the basic premises, the values, the frames of reference, the ways of thinking about health and disease, and the directions taken in the quests for new knowledge and technic: the very horizons whose unfolding is sought. Medical system not only guides the physician's daily practice

but molds his professional way of life; it determines the function of physicians and of their professions; it defines their obligations to individuals and to all of society.

Thus system is both the conceptual matrix around which the total apparatus of health care is organized, and the ideologic environment in which that apparatus functions. System is subject to design, but not to discovery. It is found, not in nature, but in the minds of men, and is demonstrated in their works. Medical system, therefore, is subject to redesign, improvement, or replacement. The need for a change of system may remain, whatever the technical advances, whatever the new discoveries and the new cures. Indeed, the need for better system may even be intensified by scientific, technical, and social advance.

The adequacy of a particular system of medicine is measured not so much by the existing health status as by the effectiveness with which it uses available knowledge and technic on behalf of human health and by the way it defines its own successes, failures, uncompleted tasks, and unsolved problems. As a medical scientist who is deeply concerned with the present health needs of society that can be met but are not, and who is acquainted with the osteopathic profession and its history, I am convinced that the central function of this profession is to bring into being a system of medicine which will make the most effective use of the fruits of science and which will give momentum to investigation and development in needed directions. Let us examine the possibilities.

Throughout its long recorded history, medicine, like religion and politics, has been subject to cleavage into schools of thought and practice. In retrospect, however, the schools appear to have fallen into two main camps. The "golden threads" of both are traceable into antiquity. Indeed, as Dubos[2,p.110] says, "The myths of Hygeia and Asclepius symbolize the never-ending oscillation between two different points of view in medicine." In one form or another they have always existed simultaneously in all civilizations. Both are discernible today, though as in the past, ". . . the cult of Hygeia tends to be neglected and . . . the skill of Asclepius looms large and bright in the mind of man."[2,p.112]

Asclepius • The central theme of the system symbolized by Asclepius and dominant today, has been the concern for the afflictions to which man is heir and susceptible. According to this system, diseases (whatever may be said about them) are viewed and treated as "autonomous entities"[3] which threaten man, attack him, annoy him, temporarily or permanently disable him, pain him, reduce his capacities for pleasure and for work, and shorten his life.

While, according to this concept, individuals differ in their susceptibility, resistance, and response to the various diseases, each of the diseases is nevertheless an entity with a distinctive natural history, subject to only minor modifications by the "host." Diseases are subject to identification, description, and classification (nosology, nosography, and differential diagnosis) according to (1) their respective causes (etiology); (2) the organs, functions, and processes that are affected (pathology); (3) the nature of the disturbance (physiopathology); (4) their effects or manifestations (symptomatology, clinical picture); and (5) the therapeutic measures to which they respond. The central strategy of this system of medicine is to identify the disease and distinguish it from others; to evaluate its severity; to learn more and more accurately and minutely the structures and processes involved and their deviation from the normal; to map the course of the disease; to identify its causes; and to find and apply therapy which will remove, block, or avoid the cause, which will halt, retard, or reverse the process, or which will remove, repair, or relieve the "effects" of the disease—and preferably all of them.

In short, according to this theme, the function of the physician is to intervene between the patient and his disease. He is defender, protector and knight in shining armor, always seeking superior weapons for combating disease and eagerly exchanging his slings for arrows, his arrows for magic bullets, and his bullets for atomic weapons. According to this system the key questions in the physician's inquiries are: What has the patient got? In what part of the body? What caused it? And, finally, What's good for it? For every disease there is a cause or combination of causes, often unknown, but always to be sought, and for every disease, a cure, already at hand or awaiting discovery.

According to this system true cure is predicated on treatment of cause. Unfortunately, "of the two thousand afflictions known in human pathology, we know the etiology of less than half, these being precisely those that man has in common with higher mammals."[3] Of the several hundred new pharmaceuticals and biologicals and the countless new instruments and methods which are made available each year, few have anything to do with the causes of the diseases towards which they are directed.[4] The proponents remain confident, nevertheless, that, given time and adequate research programs centered around each disease or disease category, the causes and cures will be discovered and man's diseases will be "picked off" one by one until health has been won.

The emphasis is, of course, not so exclusive as I have drawn it, nor does it characterize any particular profession, though it seems more intrinsic to medicine in the United States than elsewhere. We all rejoice, for example, in the growing recognition that to approach man's diseases rationally—or, to use the language of this system, "in order to solve their etiologic secret"[3]—we must turn to man himself: the whole man, the individual man. Nevertheless, this recognition is still a rhetorical one, evident mainly in exhortations, expressions of hope, and avowals of faith, more clearly expressed in prefaces of textbooks than in practice. Progress is still sought, measured, and acclaimed according to how precisely and minutely man can be dissected into his component parts, processes, and molecular species, how specifically his diseases can be identified and related to those components, and how specifically they can be

treated by physicians especially qualified to deal with them. This system, unfortunately, encompasses no reconcilement between the whole man and his components; it must, therefore, continually aspire to or pretend to travel two divergent paths while, in fact, it strides along the one it knows best. It holds aloft the banner of the Whole Man, while it proceeds, nosologically, diagnostically, and therapeutically, to take him apart.

I have refrained from naming this system because I have been more concerned with presenting an attitude, a way of thinking, than with arriving at definitions. The system I have characterized (some will say "caricatured") has appeared under a number of labels, euphemisms, and epithets. Among the more recent ones are allopathic, etiologic, specifistic, curative, remedial, reconstructive, scientific, and modern medicine.

Hygeia • The primary concern of the other system of medicine is not the natural history of diseases, but of men. From this viewpoint, disease and diseases are not merely the superimposed "effects" of adventitious "causes." They are not epiphenomena of pathologic molecular and biologic processes which intrude upon life. They *are* life, life under unfavorable circumstances: those of disparity between the capacities, resources and responses of the individual, on the one hand, and the demands and the circumstances of his life, on the other. Disease and diseases, therefore, are understandable, not as entities in themselves, but as aspects or phases of the individual's natural history, in terms of *his* nature in relation to his total environment.

Since the individual's total history and total constellation of capacities and resources, demands and circumstances—and therefore his responses and adaptations—are unique for him, disease is "biography."[3] Our illnesses, our levels of health, our predispositions, our resistance, responses, and adaptations to all the elements in our environments are, therefore, as much a record and a culmination of our individual biographies as are our personalities. "We are what we are today largely because of what happened to us yesterday and everyone has had a different series of yesterdays."[5] The apparent sameness of diseases in different individuals and the classifiability of diseases are testimony to the fact that man can respond in only a limited number of ways to an infinite variety of provoking factors. His illnesses, like his other responses, reflect his nature, rather than the qualities of all the factors that act upon him. The illnesses of man can find expression only through a limited number of instruments; his organs and tissues can behave only according to their respective natures. The diseases—the aberrations of the individual organs and processes of the human body—are, therefore, much more subject to treatment by formula than are the illnesses of the human being. For these reasons, the "same diseases" in different individuals may have very different "causes," and different diseases in different individuals may have very similar "causes." From this viewpoint, therefore, the concept of specific etiology is untenable.

The adequacy of a particular system of medicine is measured not so much by the existing health status as by the effectiveness with which it uses available knowledge and technic on behalf of human health and by the way it defines its own successes, failures, uncompleted tasks, and unsolved problems

The patient's true illness, then, is not the disease, the particular aberration of organ, cell, or process. His illness is in his total being; it involves and reflects all the factors that make him a unique individual. The patient with duodenal ulcer is not ill because of his ulcer; he has the ulcer because he is ill. It is a phase, an expression, a complication of his illness as a human being; it is the natural extension of biologic process under the circumstances of his life. The question of the diseased organs and processes is secondary to the nature and origins of the patient's illness. While minute study of his ulcer, and of "peptic ulcer" as a phenomenon in itself, with its own natural history, has revealed a great deal about peptic ulcer and what to do about *it*, such study can reveal nothing about the illness of the man or what to do about *him*. It is upon him that this system of medicine aims its available arsenal of methods. From this viewpoint it is as ridiculous to say that peptic ulcer is a gastroenterologic disease caused by hyperacidity and hypermotility of the stomach as to say that a woman's tears are an ophthalmologic affliction caused by hypersecretion of the lacrimal glands.

Normality and health, and abnormality and disease, therefore, are not separate phenomena. Normal processes and disease processes are not different kinds of processes; they are the same processes, structures, and phenomena operating under different circumstances. There is but one continuous spectrum, of infinite numbers of hues, one blending with the other, extending from health at one end to disease at the other, and not two separate and distinct spectrums. Any part of the spectrum is completely understandable only in the context of the whole. To be concerned exclusively with either end of the spectrum is to be scientifically or medically color blind and to restrict one's understanding even of that end. It is the concern of this system of medicine to understand the factors that deflect life processes toward the wrong end of the spectrum. It maintains that studying only the arrival at that end cannot yield that understanding.

From this perspective, therefore, it is not merely the function of the physician to intervene between the patient and his disease, but, in Gregg's[6] words, to keep or "to put the patient in command of the

situation." This requires the development and liberation of his resources and the achievement of his best possible way of life. This means, first, the identification of those factors in the human organism, in human life, and in the human environment which influence his resources and capacities, and then the adjustment of those which are critical and which are subject to control. The system, therefore, is predicated on the recognition that it is the patient who must get well and stay well—that cure comes from within; it is based upon the fullest liberation and development of the "healing forces of nature."

This system by no means scorns palliative treatment, as is commonly supposed. It recognizes that palliation—the treatment of diseases, their manfestations, symptoms, and processes—is an essential part of total therapy. But it insists that palliation is not enough, and that the treatment of diseases is only palliation. It insists, also, that the palliation not be such, regardless of its immediate effects, as to jeopardize the patient's own resources and capacities or to impair and retard their recovery and their future maintenance and development.

According to this system, then, progress lies in the direction of continually increasing knowledge and understanding of man and his nature, and of men and their differences; of the impacts and demands of human life in general and of human lives in particular on biologic structure and function, and of how they, in turn, meet those demands and influence the capacity for human life. This, from the perspective of this system, is the road to human health. While the promotion of health—"raising the levels of wellness"[7]—will inevitably bring increased freedom from disease, the conquest of diseases is not in itself health.

Like the system symbolized by Asclepius, this one, too, has had many labels, among them: ecologic, holistic, physiologic, constructive, social, and, in its broadest sense, psychosomatic medicine.[8]

The role of the osteopathic profession • Under the etiologic-remedial system of medicine, research has, since the epoch-making investigations of Pasteur and Koch, produced theoretic and clinical achievements so immense that they constitute the bulk of modern medicine. The "skill of Asclepius looms"[2] larger and brighter in the mind of man than ever before. It seems natural to assume that, projected into the future, this is the royal road to health and that the vast disease burden that confronts man today will inevitably yield to "crash programs" employing the same approach. It would seem to be only a matter of overcoming technical difficulties and discovering the necessary causes and cures.

However, as I shall show, conviction is mounting throughout the medical world that the prevailing system does not meet, nor by its very nature can it meet, the health needs and the disease problems that predominate today. A trend, still slow and unorganized, is increasingly evident in the direction of ecologic, physiologic medicine. The trend to this system of medicine from the prevailing one, or the achievement of a proper integration between them, is the great improvement in medicine which is now in the process of social, clinical, and scientific evolution.

What has this to do with your profession? You already know the answer. This is but the modern version of the very transition, the very "improvement in our present system," for which your profession was established. The osteopathic profession came into existence in 1892 as a small but vanguard force in this transition and as the only organized voice for the ecologic-physiologic system of medicine. It was not the first voice, nor is it now the only voice—there are many in medicine, science, government, and education—but it was and still is *the only organized voice*. Furthermore, unlike its scattered predecessors, it came into existence not only with principles, philosophy, and "expectant" confidence in natural healing forces, but it brought with it a new awareness, new strategy, and new skills. It reformulated, in the knowledge and the language of the time, the whole-man approach, and its central strategy of support and liberation of the inherent processes of homeostasis, adaptation, resistance, and recovery. But it also identified, if not for the first time, certainly more firmly than ever before, certain critically important factors and some of the most common impediments to these processes that arise in human life. Even more important, it developed remarkably effective clinical methods for detecting, evaluating, and influencing them.

These factors and impediments have their origins in the adaptations and maladaptations to the unique and unceasing demands that gravity makes upon the human being. They are related to the anatomic rearrangements associated with verticality and to man's incomplete structural and functional adaptations to the erect stance. The demands of gravity present man with peculiarly difficult biologic "problems" which are only now beginning to receive systematic investigation.† Primarily biomechanical in origin, they are problems in circulation, in distribution of fluids, in drainage of organs, tissues, and cavities, in the mechanical aspects of visceral function, in gestation and parturition, in the secondary effects on cellular function and metabolism and, most particularly, in the massive motor system of the body through which we act on our environment and express our very lives.

Improperly or inadequately "solved," these problems become important and even decisive impediments to these various functions. While they appear to have only local and minor significance to one who searches only for disease, they impair and impede not only the functions of the immediately affected organs, but, through the communication systems of the body, the functions of others. They exaggerate and unfavorably modify the impact of other variables in human life: environmental, emotional, social, nutritional, traumatic, hereditary, congenital, and microbial. Their presence thus inevitably impairs to some extent the individual's capacity for adapting to the circumstances of his life, for resisting threats to his health, and for recovery from disease. The

†Witness the recent establishment, in New York City, of the Institute to Study Gravitational Strain, under the direction of Martin Jungmann, M.D.

impairment becomes more critical, the more unfavorable the other circumstances in the individual's life and in himself. The mitigation of these impediments, therefore, liberates the forces of resistance, recovery, and adaptation and to a significant degree insulates the individual against unfavorable factors, rendering them less important.

These factors are unique in their high incidence in man, in the scope and nature of their influences, and in their amenability to control—by methods devised and developed by the osteopathic profession. The superficial tissues and the motor system of the body, our means of exchange with, and of action on, the external environment, can reveal much about the adequacy of our individual adaptations to gravitational demand, and, to the discerning observer, are also mirrors of the internal environment. Systematically evaluated by methods devised and adapted by the osteopathic profession, they reveal information about the person as a whole which as yet is not obtainable through any other means. The framework and integument of the body, therefore, both reflect and influence the health of the individual. There can be no doubt—for those who have developed the necessary skills, for those who have benefited from those skills, and for those who have some understanding of the biologic factors and mechanisms which are involved—that osteopathic manipulative therapy and its associated diagnostic methods provide values in health service for which there are as yet no substitutes.

Important as this contribution was, however, and much as your profession, in its early history, concentrated on the development and application of the new diagnostic and therapeutic skills centered around body mechanics, it was never an exclusive emphasis for the profession, though it was for many individual members. The profession early recognized that the care of the whole man required the appropriate integration of all methods and measures which would contribute to his well-being, and explicitly stated so in the charter of its first college.

The profession sought, from the beginning, to introduce a more comprehensive, more rational, and more effective *design* into the whole of medicine, one which would guide the selection, use, and development of the physician's entire armamentarium. It recognized that the system could be no better than the total methodology that served it. However, the profession insisted, and with good reason, that no system of medicine could be comprehensive which did not give adequate consideration and therapeutic attention to biomechanical factors. But it never insisted that these be the sole considerations. It welcomed consideration of all other factors and welcomed and used (when privileged to do so) all other methods that could help give expression to the total design. This included any and all methods in "surgery, obstetrics, and the treatment of diseases generally" which would contribute to well-being, which would promote the patient's own resources and help him take command of his situation, and which would not treat one illness while opening doors to others.

This total design, this improvement in "our present system of medicine," together with a most important contribution to its implementation, is what the osteopathic profession, 67 years ago, sought to introduce into medicine and for which it established itself. It is undeniable that, small in magnitude though it was, it was a magnificent beginning.‡ It brought new hope, a new scope, a new practical meaning to the holistic, man-centered system of medicine unequaled in its entire 2,300-year history. *This*, in my opinion, is the great mission to which this profession must once again address itself. *This* is the vast horizon which awaits your unfolding.

Does it satisfy the criteria?

Does it meet the criteria for the correct decision? Time does not permit the testing of all the criteria posed in an earlier section. I shall, therefore, test only the most decisive criteria—those which, if met, will guarantee the meeting of the others.

Does it fill a social need, one of such importance as to demand the continued existence of the osteopathic profession and to justify society's most generous support?

Is there a real need for a change in the system? This, it seems to me, is the most decisive criterion of all and it therefore merits the most rigorous testing. Fortunately, much of this testing has already been done, and with conclusive results.

As mentioned earlier, more and more medical leaders and scholars have concluded that, brilliant and numerous as have been the successes of specifistic medicine, it has failed abysmally to meet existing health needs. Nor will the failure be turned to triumph by the overcoming of technical difficulties and by the discovery of missing causes and cures. It will continue to fail because of its basic inadequacies, whatever the technical advances. Because of the nature and scope of the unmet health needs, this failure can only continue to have increasingly wasteful and tragic consequences to our society. In seeking answers, at the basic level, to these overwhelming problems, these medical leaders have eloquently demonstrated that satisfactory progress in the solution of these problems awaits the application of principles concerned more with the factors that determine man's vulnerability than with the cures for all

‡The beginning was especially magnificent in view of the circumstances. The founders of the osteopathic movement could not have selected a more difficult time, a time when the medical stream was running most strongly in the opposite direction. This was the period of most precipitous ascendancy of the etiologic-curative-specifistic school due to the epoch-making discoveries of Pasteur, Koch, von Behring and, later, Ehrlich and many others. Within a very short period of history, these discoveries brought confident expectation that, at last, medicine was ready to identify, one by one, the specific causes of man's diseases, identify and describe the specific cellular pathologies associated with them, and to find, concoct, or provoke the specific chemical or biologic cures which would checkmate the causes and undo their effects.

In the period that followed—a period that has coincided with the entire life of the osteopathic profession—greater progress was made in medicine than in all of its previous history. The results have been magnificent, dramatic, easy to see, simple to understand. There could hardly have been a less propitious time in which to seek to convince the world of the need for another approach. It is testimony to the great strength of the early osteopathic movement, to the courage, the determination, and the skills of the profession, that not only was it not swept away in this great, swelling stream, but that it was able to hold on and even, miraculously, to grow.

the diseases to which he is, or becomes, vulnerable. The basic soundness of such a physiologic system now glows more steadily than ever through the dazzle of specifistic medicine and reveals more sharply than ever the intrinsic inadequacies of practice based largely on doctrines of specific etiology and cure.

The writings of Sigerist,[9] Gregg,[6] Dubos,[2,10] Stieglitz,[5] Galdston,[11,12] Selye,[13] Wolff,[14] Jensen,[15] and Dunn,[7] to name a few, are especially deserving of your careful study. As a matter of fact, if this profession is to give serious attention to its horizons, the study of these works must inevitably be a part of that attention. A summary of these contributions is far beyond the scope of this paper, and time permits selected documentation from only one or two of these writings. I am convinced that were this profession to give careful study to only one, the most recent one, of these volumes, *The Mirage of Health*, by René Dubos,[2] it would find its own sense of direction renewed and its confidence in the rightness of its founding purpose reawakened. It is a wise, exciting, and beautifully written book, by one of the world's most distinguished microbiologists.

A sobering conclusion emerges from the study of these works that is well substantiated by the recent National Health Survey and other authoritative reports on the state of the nation's health. Not only is the state of American health not superior, as we boast, but, properly measured, it is poor and getting worse. If one examines, not the figures for reduced death rates and for increased life expectancy at birth (which are usually misinterpreted as improvements in health and in longevity[16]), but the amount and kinds of illness, it is staggering in magnitude and steadily increasing. At the present time 10 per cent of the average American's income goes for medical care, and hospitals cannot be built fast enough to accommodate the sick. Forty-one per cent of the population have one or more chronic disease conditions and 17 million persons, about one-tenth of the population, are partially or completely disabled by disease alone. One out of every four citizens will have to spend some months or years in an institution for mental disease. One wonders, with Dubos, ". . . whether the pretense of superior health is not itself rapidly becoming a mental aberration. Is it not a delusion to proclaim the present state of health as the best in the history of the world, at a time when increasing numbers of persons in our society depend on drugs and on doctors for meeting the ordinary problems of everyday life?"[2,p.21] We seem to have forgotten the humiliating shock this country felt not long ago when the Selective Service program revealed the immense amount of disease and disability in "the cream of our country." And no statistics can reveal the low level of vigor which most of us have come to regard as normal.[7] It is grimly amusing that even the word "euphoric," which used to mean a state of well-being, has gradually come to designate an abnormal state!

But surely the "conquest" of the communicable diseases, proclaimed as an achievement of scientific medicine, testifies to the effectiveness of its methods?

The function of physicians, and particularly of their professions, is far more than the practice and advancement of their art. They must be deeply concerned with all the factors in society which have a significant bearing on human health. They must seek . . . the best possible environments for human life

It is no problem to demonstrate that, contrary to the prevailing impression, not only have the infectious diseases not been conquered, but they continue to be a tremendous burden. As Dubos shows, the misleading impression is created by the use of an inadequate yardstick—mortality—for evaluating the importance of a medical problem and the progress in the solution. Now that the widespread epidemics and plagues of the past, with their wholesale mortality, have been brought under control, the continued use of this index is deceptive and dangerously comforting. If, instead of merely counting the number of lives ended by disease, one measures the total amount of "life spoiled by disease," or the economic cost in drugs, hospitals, and doctor's bills and in reduced productivity, the burden of infectious disease is revealed as still tremendous. "Microbial diseases have not been conquered. Rather, physicians and scientists have resigned themselves to the belief that a relative protection against them can be bought at the cost of a huge ransom."[2,p.135]

By no means is the great reduction in mortality to be dismissed as unimportant. But accuracy and perspective demand recognition that the great decrease in epidemic mortality of the past few decades is much less a product of scientific medicine than of humanitarian movements and social progress leading to improvements in social patterns, in physical environment, in sanitation, in living standards, and in nutrition. It is a product also of natural processes of adaptation between man and microbe and even of such factors as the introduction of inexpensive, easy-to-launder cotton undergarments, shorter working hours, and other incidental and accidental circumstances.[10,11] These factors have "contributed more to the control of infection than did all drugs and medical practices."[2,p.224] "The toll of human lives exacted by infection had begun to decrease several decades before control measures inspired by the germ theory were put into effect and almost a century before the introduction of antimicrobial drugs."[2,p.63] The "monster of infection" had become a mere shadow of itself before medicine could provide rational and scientific methods for its control. The effect of the antibacterial drugs has been but a "ripple" on the long-established decline in mortality,

a decline largely attributable to widespread improvement in human factors.

This is not to deny, of course, the great effectiveness of drugs and medical practices in interrupting and preventing many infectious processes, even many which would be fatal, but it is to put them in proper—and urgently needed—perspective. Moreover, this is not merely a matter of historical perspective, for it has critical bearing on our present problem.

Etiologic-curative medicine, so preoccupied with disease and death and with their microbial "causes," finds little of interest in the human factors which permit them to *become* causes. Overlooked is the simple but vital everyday observation that while, certainly by definition, microbes are essential elements in the production of infectious diseases, the fact remains that infection usually occurs, and even exists for whole lifetimes, without production of disease. Disease is the exception. It is the consequence, not of infection, but of a breakdown of the mechanisms of adaptation and resistance. "In man the provocative cause of microbial disease may be a disturbance in any of the factors of his external or internal environment. . . ."[2,p.79] As Pasteur himself said, unrestricted multiplication of germs is no less a consequence of illness than its cause. For this reason, "drugs cannot be effective in the long run until steps have been taken to correct the physiological and social conditions originally responsible for the disease. . . ."[2,p.137]

Thus, constructive a force as the doctrine of specific etiology has been in medical research, it cannot provide a satisfactory account of the causation of even the microbial diseases, in which specific etiologic factors are known. A system of medicine which bases itself on such a doctrine, which directs its skills so much against infectious agents and so little for the man; which relies so much on bullets and shotguns aimed at the infinite variety of infectious agents, while neglecting to identify and influence the factors which determine man's vulnerability and resistance to all of them; a system which disregards and upsets the natural processes of mutual adaptation between man and microbe—such a system can only continue to fail to meet even the problems of infectious disease, which it proclaims as its area of greatest success. Even worse, it creates new problems, sometimes worse in the long run than those that are "solved." The current "staph problem" which is plaguing American hospitals is but one example.

Great as has been this general failure with respect to the infectious diseases, how much greater is the failure—etiologically, therapeutically, and preventively—with respect to those diseases which cannot even remotely be ascribed to invading agents and which today are even a far greater burden than the infectious diseases. They, the chronic killers and cripplers—the heart and cardiovascular diseases, the metabolic diseases, the collagen diseases, cancer, peptic ulcer, and many other long-term diseases—are, even more than the infectious diseases, the products of whole constellations of human factors. These now present a burden of incalculably immense proportions, already overwhelming even the palliative resources of medicine and growing at an increasingly rapid rate.[4,17] A system which continues in a hopeless quest for *the* causes of each and *the* cures for each, while neglecting the human factors from which they do arise, can only be regarded, basically, as a failure, however brilliant, effective, and welcome the expedient measures with which it temporizes.

Unlike the infectious diseases, which man shares with other animals, the degenerative diseases are almost peculiar to man. It is a challenge to the experimenter to produce even their most pallid facsimiles in animals. The natural, built-in defenses, which man shares with other animals, against the microbial pathogens—fever, inflammation, immune reactions, phagocytosis, and so forth—are the adaptive products of evolution. The degenerative diseases are quite another problem. As the expression of peculiarly human frailties, "natural" and self-inflicted, they, and not the defenses, are the products of human evolution. Indeed, there can be few if any adaptive biologic defenses against the rapidly changing stresses peculiar to human life, many of them man-created, and certainly not against man's own inadequate or misdirected responses to those stresses. In most circumstances the biologic responses and "adaptations" are worse than the provoking factors and are in themselves disease. Not only are they not self-limiting, but they become sustaining and exacerbating factors, initiating and propelling vicious circular processes which continually exact larger and larger tolls of the individual as he ages, and as the disparity widens between his biologic resources and the demands upon them. In effect, the patient writes larger and larger checks on a shrinking account.

For the most part, the chronic degenerative diseases are not the "effects" of specific "causes" which can be identified, exorcised, combated, and abolished with magic bullets. They are the products of whole lives. Their origins and their basic management (in contradistinction to their palliation) are to be found in the unique nature of man, of his life and of his environment, in the differences among men that cause them to embark on separate and divergent physiologic paths, in the fact that man is required to live a human life with biologic apparatus which he inherited from lower animals. Hopes lies in the creation of those circumstances which will permit each individual to stay on his most favorable physiologic paths and deflect him from unfavorable paths. To speak of causes, cures, and reversal is to reveal ignorance of the basic character of chronic degenerative disease.

A study recently completed at Cornell University Medical College by Hinkle and Wolff[18] magnificently epitomizes the primacy of human factors in all disease. The illness patterns, during 20-year periods in young adulthood, of approximately 3,500 people drawn from the ambulatory population, revealed that episodes of illness were most unevenly distributed. *One fourth* of the individuals experienced a *majority* of all the episodes of illness that had occurred

among all of the people, while another fourth had only 5 to 10 per cent of the illnesses.

Even more startling than the wide differences in susceptibility was the comprehensiveness, the nonselectivity, of the susceptibility. The authors state:

> These differences in susceptibility to illness were not simply the result of differences in susceptibility to one or another specific syndrome. In every group the members displayed a difference in their *susceptibility to illness in general, regardless of its type, or of the causal agents involved.* Thus, as the number of episodes of illness experienced by an individual increased, the number of different types of disease syndromes that he exhibited increased also. Although a great many of these syndromes might involve one or two organ systems, episodes of illness were not limited to a few systems; instead, as the number of episodes of illness experienced by an individual increased, the number of his organ systems involved in disease increased also. Likewise, as the number of episodes he experienced increased, he exhibited illness of an increasing variety of etiologies. He was likely to have more 'major', irreversible and life-endangering illnesses, as well as more 'minor', reversible and transient illnesses. [Italics supplied.]

In the opinion of the authors, these findings are most reasonably explained by assuming that they are dependent upon "factors operating within the individual," influencing his responses to the "great variety of other factors known to be capable of causing disease." Consistently high illness rates in susceptible individuals reflect continuing inability of the individual to make adequate adaptations to his total milieu.

One of the most significant results of the study was the remarkable constancy of individual illness patterns, for it indicates *"that the illness patterns of these people were relatively little influenced by the therapeutic efforts of the physicians who treated them."* (Italics supplied.) It may be assumed that these "therapeutic efforts" were reasonably representative of specifistic-etiologic medicine and included a representative sampling of the several hundred new pharmaceutical products and miracle drugs produced each year,[19] selected for their effectiveness in each illness. Perhaps nothing more clearly dramatizes the basic inadequacy of a system of medicine which, in the name of science, concentrates so hard on individual diseases, their "causes" and their "cures," while, in its contempt for what it regards as armchair philosophy, it so tragically disregards the man and the factors in him which determine his vulnerability to illness in general. As Hinkle and Wolff[18] conclude:

> Ultimately medicine will have to take account of this in treatment of illness. It is very probable that an increasing proportion of the therapeutic effort will have to be directed at the patient's relation to his environment *if we wish to make any significant improvement in his health.* . . . The problem stands before us as a stern challenge to medicine, and not as an easy opportunity. [Italics supplied.]

Obviously, it is becoming more widely recognized that disease, and most particularly the rapidly rising tide of degenerative disease, can be stemmed only through identification and control—especially prophylactic identification and control—of the variables in the human organism and in his life situations which determine the physiologic path he travels.[2-18] This recognition, however, has had little impact on medical practice. The basic strategy remains essentially unchanged, though a transformation in medical knowledge and technic has taken place. Society's urgent need for the holistic-ecologic-physiologic approach is now far greater than ever. That approach now offers the only hope. But, unfortunately, this movement still awaits organized, dedicated leadership and implementation. This is the movement, the great improvement in the *design* of health care, that this profession, as its only organized voice set out to lead 67 years ago.[16] Seldom in history has an organized group of men and women perceived, grasped, and then seemingly relinquished, a greater opportunity. Presented, by its history and now by society, with an immense opportunity, your profession still debates whether it has a function of its own and a reason for existence, and wonders where the resources would come from if it had.

Fortunately, there is still time—a little time—for a second chance. Were this profession to proclaim to the world, again and again, factually, clearly, courageously, that *this* is the movement it seeks to propel, and why; and were it to demonstrate that, given the means, it is qualified to do so, it would be given the means.

There is no doubt that the first criterion, "Is there need for a change of system?" is amply satisfied.

Is this function appropriate to, and within the power of, the osteopathic profession?

Not only was this movement toward holistic medicine your founding purpose; it is a rich part of your total experience as a profession. It is more deeply a part of your insights than of any other profession, more than you apparently recognize and certainly more than now finds expression in your function as a profession. Your profession is still the greatest reservoir of physicians oriented in its principles and skilled in their application. You are now stronger, better organized, better armed, more accepted than ever before. Though you are now preoccupied with numbers, some of your greatest assets are those provided by your small size: mobility, maneuverability, flexibility. You have the independence that imparts power to every minority movement. You lack only the commitment, the conviction, the objectives to put that power into motion and to give it direction.

Does it offer comprehensive design for your total effort and for the mobilization and utilization of your resources?

The answer to this question also is a resounding affirmative, as you would discover. Long absorbed in catching up and keeping up with all the advances in modern medicine and with meeting standards in all the instrumentalities and technics of medicine, you would now be able to give leadership and to set new standards in the integration of those instrumentalities and of the available knowledge on behalf of human health. It would become possible for every segment of the profession, every specialty, every physician, and every organization to define their own best roles and for the profession as a whole to achieve balance among all of its many, often conflicting, areas of endeavor. It would offer design for

new and needed forms of professional organization and of clinical practice.

Similarly, the profession has long operated on the apparent premise that osteopathic education consists of a more or less conventional medical curriculum to which simply another element has been added, like the cherry on an ice cream sundae. The profession would recognize that an improved system of medicine demands an improved system for the education of physicians. A truly osteopathic curriculum still awaits development. The profession and its educators would discover that the horizon that is proposed for your unfolding provides the basis for total design of the curriculum, of its components, and of its faculties. Demanding, as the system does, new forms of medical practice, it would also prescribe the new forms and instrumentalities of medical education.

Does it define your tasks and your obligations?

Let me identify but two, which are of such vast significance that they alone would demand the existence of your profession.

The first is the continued development of one of your most important and certainly your most conspicuously distinctive contribution to medicine. Were you fully to commit yourself to the function which has been proposed, you would discover that osteopathic manipulative therapy, with its ancillary diagnostic methods, is not merely another form of therapy in your total arsenal. It is not one which may be arbitrarily withheld from the patient just because its mechanisms are not understood, because the physician has not taken the trouble to develop the necessary skills, because he finds it inconvenient, or because it is politically inexpedient. You would discover that you have no greater moral right to withhold manipulative therapy than any other therapy.

But it is not just another form of therapy; it is a whole strategy, a whole approach in itself. It is not merely a treatment of "lesions"; in effect, it is the putting of influences into the whole man through the accessible tissues of the body, influences which deflect his life processes to more favorable paths, and which help put the man in better command of his situation, whatever it is, whatever it may become, whatever his illness, whatever its etiology. To speak and to think of manipulative therapy as though it were a discrete, uniform entity independent of the unique understanding and skills of the individual physician, one which can be designed for a mythical "average man," as something which can, in wholesale manner, be declared "indicated" or "contraindicated" for this or that "condition," or to regard it as an aspect of physical medicine, is to miss the strategic significance of osteopathic manipulative therapy and to limit its great potential.

As a physiologist who has studied deeply in this area I am firmly convinced that this is an area of medicine of such vastness, of such depth, of such endless ramifications and interconnections, and of such import to human health that it is as demanding, as exacting, as honorable a life work as any other. Its potential has hardly been explored. Commitment to the proposed horizon will help you recognize your obligation to give manipulative therapy and its cognate arts and sciences their appropriate status and full expression in your educational system and, through that, in practice. Above all, it will guide you in the recognition and the fulfillment of your obligations in the development of this contribution.

I am convinced that commitment to the total design of which I have spoken will in itself give great impetus to that development, not only within your profession and its institutions but throughout the world. For example, there can be no doubt that the unfavorable influences of musculoskeletal stress and the favorable influences of osteopathic manipulative therapy are mediated to a large extent by the peripheral and segmental nervous system.[20,21] In the past quarter-century there has been an immense increase in laboratory and clinical investigation in every civilized country demonstrating (1) the decisive influence of the innervation of tissues, not only on their moment-to-moment activities, but on their total condition and on their responses to all other factors; (2) the subversive "organizer" role of the spinal cord, brain stem, and peripheral nerves in virtually every disease process; and (3) the common origins of the unfavorable influences in the musculoskeletal and other somatic tissues of the body. The literature is now so vast, extending into every function, every organ, every disease, every area of health and disease, as to constitute a massive new movement in medicine. This is a movement to which the osteopathic profession should long ago have given leadership. Not only has it not given that leadership, but it seems not even aware that the movement is under way. Unfortunately, because there has been no conceptual framework to unite them, these countless contributions remain scattered fragments which find no place in prevailing frameworks. The erecting of the needed framework by this profession would have tremendous impact on this and many other areas of investigation and would give needed direction to its own investigations.[22]

The second obligation with which I would illustrate may be designated as medical statesmanship. The function of physicians, and particularly of their professions, is far more than the practice and advancement of their art. They must be deeply concerned with all factors in society which have a significant bearing on human health. They must seek, with the cooperation of all social agencies, the best possible environments for human life. Among the factors that deeply affect the public health and the effectiveness of medical service are the forms and structure of medical service itself and the social, economic, and political framework in which medicine is practiced.

There is much that is good, of course, in the present framework of medical practice. But there is also much that is inimical to the health needs of society; much that prevents the best use of clinical talent; much that needlessly and severely limits its availability and exaggerates its cost; much that prevents the most effective utilization of available knowledge and technic; much that degrades the physician and

the profession of medicine; much that is evil. And much, therefore, that the public finds increasingly intolerable. It is not a coincidence that these same features are completely inimical to the great contributions the osteopathic profession set out to make. Indeed, they are incompatible with—and indefinitely postpone—the practice of *any* system of comprehensive, constructive, prophylactic, ecologic medicine. Such a system of medicine not only demands a change in the structure of medical service, but provides the design.

The strong voice of this profession has yet to be heard on these issues. It has been remarkably willing to acquiesce to the present framework and to demonstrate its ability to adapt to it. Its silence on these issues contrasts sharply with the vigor with which this same profession battles for rights and privileges for itself. To give support, even by silence, to those parts of the framework and those forms and aspects of medical practice which, for society's sake, need changing is to lend your strength to the prevention of the unfolding of your own brightest horizons.

Now is the time for medical criticism[23] and medical statesmanship of the highest order. Now is the time to utilize your organized strength fearlessly, creatively, imaginatively, and unselfishly in the promotion of the needed changes. This is not only your obligation as a profession. It is the only way, along with development and dissemination of your own clinical, scientific, and humanistic contributions, to win the strength and the support from society that you so desperately need.

Conclusions

You have before you, then, a momentous decision: the function you propose to perform for society. I do not know whether you will make a decision or what decision you would make. I do know that to make the wrong decision or to delay much longer (which is the same thing) is to miss your second and last chance, to abdicate the right to existence as a profession and to make of your illustrious history a shameful fiasco. Far, far worse, it would delay for many decades a great forward step in human health and therefore contribute to untold waste of human life in needless suffering. In effect, the decision is between becoming, as you set out to be, the head of a new movement in medicine or the withering appendage of a declining one. According to its decision, the osteopathic profession either will always loom bright in the mind of man or be recorded as a passing footnote in the history of medicine.

What horizon, then, do you propose to unfold? What contribution to society do you wish to make? That is the decision before the osteopathic profession. It will either merit society's nurturing or it will not. Society will be the judge of that. Society's judgment awaits *your* decision.

1. Thompson, M.; Continuing growth of profession keyed to continuing college growth. J. Osteopathy 66:15-20, April, 1959.
2. Dubos, R.; Mirage of health; utopias, progress, and biological change. Harper & Brothers, New York, 1959.
3. Martí-Ibáñez, F.; Disease as biography. M.D. 2:11, Oct. 1958.
4. Scheele, L. A.; Medical research—unfinished business. J. Am. Osteop. A. 58:653-655, June 1959.
5. Stieglitz, E. J.; Future for preventive medicine. Harvard University Press, Cambridge, 1945.
6. Gregg, A.; Challenges to contemporary medicine. Columbia University Press, New York, 1956.
7. Dunn, J. H.; Points of attack for raising level of wellness. J. Nat. M. A. 49-225-235, July 1957; reprinted Forum of Osteopathy. 32:32-38, March 1958.
8. Galdston, I.; Psychosomatic medicine; past, present, and future. A.M.A. Arch. Neurol. & Psychiat. 74:441-450, Oct. 1955.
9. Sigerist, H. E.; Civilization and disease. Cornell University Press, Ithaca, 1943.
10. Dubos, R.; Biochemical determinants of microbial diseases. Harvard University Press, Cambridge, 1954.
11. Galdston, I.; Meaning of social medicine. Harvard University Press, Cambridge, 1954.
12. Galdston, I.; Homines ad deos: or Clinical bull in ecological china shop. Bull. Hist. Med. 28:515-524, Nov.-Dec. 1954.
13. Selye, H.; Stress and disease. Science 122:625-631, Oct. 7, 1955.
14. Wolff, H. G.; Stress and disease. Charles C. Thomas, Springfield, Ill., 1953.
15. Jensen, J.; Modern concepts in medicine. C. V. Mosby Co., St. Louis, 1953.
16. Ogilvie, C. D., *et al.*: Symposium: Degenerative disease: enigma? challenge. opportunity! J. Am. Osteop. A. 58-151-157, Nov. 1958.
17. Commission on Chronic Illness: Prevention of chronic illness. Chronic illness in United States, vol. 1. Harvard University Press, Cambridge, 1957.
18. Hinkle, L. E., Jr., and Wolff, H. G.; Ecologic investigations of relationship between illness, life experiences and social environment. Ann. Int. Med. 49:1373-1388, Dec. 1958.
19. Kramer, L. M.; Drugs and medicines. Pub. Health Rep. 73:929-939, Oct. 1958; reprinted J. Am. Osteop. A. 58:155-A-164, Feb. 1959.
20. Korr, I. M., Thomas, P. E., and Wright, H. M.; Symposium on functional implications of segmental facilitation; research report. J. Am. Osteop. A. 54:265-282, Jan. 1955.
21. Korr, I. M.; Monograph in preparation.
22. Korr, I. M.; Osteopathic research: why, what, whither? examination of its content, direction, and relation to function of osteopathic medicine. J. Am. Osteop. A. 56:275-285, Jan. 1957.
23. Bean, W. B.; Critique of criticism in medicine and biological sciences in 1958. Perspectives in Biol. & Med. 1:224-232, Winter, 1958.

Splenic vein obstruction in carcinoma of the tail of the pancreas as demonstrated by percutaneous splenoportal venography

ROBERT R. ROSENBAUM, D.O., and MILTON METZMAN, D.O.*, Philadelphia, Pennsylvania*

Since 1951, when Abeatici and Campi first described their experimental observations utilizing percutaneous splenoportal venography[1] in the dog, the literature has become increasingly abundant in elaborations and expansions upon earlier descriptions, advantages, indications, and potentialities of this roentgenographic procedure. The relative safety of the procedure,[1] its technical simplicity, and the resultant yield of information are probably major factors in establishing percutaneous splenoportal venography as a definite roentgenographic aid in the diagnosis of various clinical entities that directly or indirectly affect the portal venous system.

Although portal hypertension is still probably the primary indication for this procedure, there are definite advantages to its use in other disease states. The following is an outline of the three major categories that may warrant the use of percutaneous splenoportal venography as a diagnostic aid.

1. Portal hypertension with or without cirrhosis
   a. Establishment of the presence and degree of portal hypertension
   b. Demonstration of esophageal varices[2,3,4]
   c. Preoperative evaluation to indicate type of shunting procedure most useful and vessels to be involved[5,6]
   d. Postoperative evaluation of the shunting procedure[7]
   e. Determination of the extent of liver cirrhosis by direct visualization of the intrahepatic portal tree[2,8]
   f. Delineation of miscellaneous entities including portal or splenic venous thrombosis, cavernous transformation of the portal venous system,[7,9] splenomegaly, and causes of ascites of unknown origin.[10]
2. Liver disease other than cirrhosis
   a. Primary or metastatic malignant lesions[2,7]
   b. Cysts,[2] abscesses, and rupture.
3. Retroperitoneal pathologic conditions
   a. Evidence of displacement, deformity, invasion, or obstruction of the portal and splenic veins by retroperitoneal space-taking lesions, benign or malignant, including pancreatic cysts or neoplasms, enlarged lymph nodes, and advanced intra-abdominal carcinomatosis.[7]

The following case report is presented as an example of the usefulness of the procedure in pancreatic disease, and because we believe it to concern a phase of percutaneous splenoportal venography which has been only superficially considered in medical literature.

Case report

A 57-year-old man entered the hospital because of abdominal pain. The pain was described as dull and intermittent, was located in the right upper quadrant, and was associated with fullness and vague epigastric discomfort. There was occasional radiation of pain to the right scapular area. Although rather mild initially, 2 months prior to admission, the pain was gradually becoming more pronounced and constant. It was most severe after eating, and was relieved by belching and walking about. There was associated nausea, anorexia, and fatigue, and a 14-pound weight loss was reported. The patient denied vomiting, change in bowel habits, or melena.

There were no previous hospitalizations. A moderately heavy alcoholic intake was admitted, but with the onset of symptoms the patient had had no desire to drink. Some burning on urination was present but there was no associated frequency or hematuria.

Physical examination revealed an asthenic, poorly nourished white male in no acute distress. He was 5 feet 6 inches tall and 114 pounds in weight. Blood pressure was 142/70 and pulse rate was 92; temperature and respiration were normal. The heart and

*Dr. Rosenbaum is a radiologist and Dr. Metzman a senior resident in radiology at the Metropolitan Hospital, Philadelphia.

Fig. 1. Upper gastrointestinal study demonstrating the coarsened, hypertrophic gastric mucosa.

lungs were within normal limits. The tongue was smoother than average and exhibited a coarse tremor, as did the hands. Spider nevi appeared on the face and the neck veins were slightly distended. The abdomen was moderately distended, firm, and dull to percussion, and it exhibited prominence of the superficial veins. There was no pain on palpation. The liver was percussed 3 cm. below the right costal margin and was mildly tender. The spleen was not palpable and there were no other masses detected. The left inguinal nodes were prominent and a varicocele was present. Hemorrhoids were present and the prostate was firm and enlarged. Sigmoidoscopic examination was unremarkable.

On admission, the hemoglobin was 14.5 grams (94 per cent); hematocrit reading was 47 per cent, and the leukocyte count was 8,400 with 70 per cent segmented neutrophils and 30 per cent lymphocytes. Urinalysis showed an occasional erythrocyte per high power field. Sedimentation rate was 28 mm. per hour. Fasting blood sugar was 90 mg. per 100 cc.; blood urea nitrogen was 27 mg. per 100 cc.; cholesterol was 281 mg. per 100 cc.; cholesterol esters, 160 mg. per 100 cc.; total protein, 5.56 grams with 2.93 grams of albumin and 2.63 grams of globulin, with an albumin-globulin ratio of 1.1 to 1.0. VDRL and Kolmer tests were nonreactive. Cephalin flocculation was zero at 48 hours; bromsulphalein test showed no retention; thymol turbidity was 0.5 Maclagan unit; and acid phosphatase was 0.4 unit with the prostatic acid phosphatase fraction being 0.1 unit.

Less than 1 week after admission, there were 13.0 grams of hemoglobin (84 per cent), a hematocrit reading of 40 per cent, and a blood urea nitrogen value of 39.4 mg. per 100 cc. Serum bilirubin was 0.2 mg. per 100 cc., and prothrombin time, 100 per cent. Alkaline phosphatase was 1.9 Bodansky units and inorganic phosphorus was 3.8 mg. per 100 cc. An electrocardiogram showed a vertical heart with marked clockwise rotation but was otherwise not remarkable.

Admission chest roentgenogram was negative. Upper gastrointestinal tract examination showed some irregularity of the gastric mucosal pattern at the greater curvature of the antrum which suggested the possibility of a hypertrophic mucous membrane (Fig. 1). The survey film suggested the presence of free peritoneal fluid. A colon study was not remarkable. A second upper gastrointestinal tract examination was unchanged from the first. Intravenous urography showed a poorly opacified left renal collecting system with a bizarre calyceal structure, suggesting the possibility of extrinsic pressure (Fig. 2). A retrograde pyelogram delineated a less bizarre calyceal system, but the left kidney could still not be considered normal roentgenographically (Fig. 3).

Ureteric urine cultures were sterile after 48 hours, and Papanicolaou studies showed no tumor cells. Bladder fragments submitted after cystoscopy revealed a transitional cell carcinoma, grade 1. Liver biopsy showed a normal hepatic architecture, with some fatty change. There was no evidence of cirrhosis. Paracentetic fluid failed to reveal evidence of malignant cells.

The patient was discussed in conference and it was decided that percutaneous splenoportal venography might be of value in (1) showing evidence of liver cirrhosis where other studies had failed and (2) ruling out the possibility of retroperitoneal mass lesions that might have encroached upon the portal venous system, producing the described physical

Fig. 2. Intravenous pyelogram showing the bizarre left renal collecting system suggestive of extrinsic pressure.

Fig. 3. Retrograde pyelogram showing the less bizarre appearance of the left renal collecting system.

findings, and upon the stomach and left kidney, producing the described roentgen findings.

Percutaneous splenoportal venography was carried out as follows: The patient was mildly sedated and following analgesia, 50 cc. of 50 per cent Hypaque was rapidly injected into the spleen through the ninth intercostal space, at the midaxillary line, with a 16-gauge spinal needle. Because an automatic serial filming device was not available, a rehearsed "cassette brigade" was employed to facilitate the making of four exposures at 4, 12, 20, and 120 seconds after injection. Manual cassette changing has been described as adequate in lieu of serial roentgenography which may not be available.[2,5,7] The patient was also briefly trained in suspending respirations when required. After wet film inspection showed that a successful injection had been performed, the needle was withdrawn and the patient was returned to his room and observed for signs of possible bleeding. The patient experienced minimal discomfort throughout the procedure. Manometric readings were not made.

At the 4-second interval, the splenic parenchyma was partially opacified and there was opacification of an extensive collateral circulation consisting primarily of the gastroepiploic and coronary (left gastric veins (Figs. 4a and 4b). Several esophageal veins were filled along with what appeared to be the retroperitoneal plexus. The splenic vein was not visualized, but the distal portal vein appeared to be faintly opacified, probably via the gastroepiploic collaterals, and appeared to be somewhat dilated and nodular in configuration. At 12 seconds, the dye had left the opacified esophageal veins and the liver was opacified. At 20 seconds, the dye opacity was diminishing at the proximal collateral vessel area (Fig. 4c).

It was noted on all films that the splenic vein was never visualized and that the distal gastroepiploic collaterals were always more opaque than the portion of the "nodular" distal portal vein into which it emptied.

At 2 minutes, only residual dye remained in the splenic parenchyma. The resultant hepatogram was considered to be within normal limits.

In view of the fact that this patient showed extensive collateral portal venous circulation without laboratory or roentgen evidence of cirrhosis of the liver, an extrahepatic portal block was assumed and an exploratory laparotomy was performed.

Fig. 4a

Fig. 4b

Fig. 4c

Fig. 4a. Splenoportogram at 4 seconds. Fig. 4b. Line drawing, showing position of (A) esophageal veins, (B) coronary veins, (C) splenic parenchyma, (D) retroperitoneal plexus, (E) gastroepiploic veins, and (F) portal vein. Fig. 4c. Splenoportogram at 20 seconds. The splenic vein and inferior mesenteric veins were never visualized.

Upon opening the abdomen, approximately 300 cc. of serosanguinous fluid was encountered. There were multiple small white plaques on the parietal peritoneum. Opening of the lesser omental cavity revealed a large, white, indurated mass completely incorporating the tail of the pancreas just below the spleen, encroaching upon the splenic vessels as they left the hilum. Collateral circulation was most marked along the greater curvature of the stomach where the gastroepiploic vessels were dilated to approximately 1 cm. The portal vein was seen to be patent but the point of entry of collateral vessels could not be visualized. Several nodes were palpable along the celiac axis. A biopsy of the tumor mass disclosed that it was adenocarcinoma of the pancreas, partially differentiated.

The abdomen was closed and after an uneventful postoperative course, the patient was discharged, 9 days following operation. After leaving the hospital, he experienced a progressive downhill course and died at home in 2½ months.

Discussion

Absence of filling of the splenic vein and the presence of a collateral circulation favored the diagnosis of splenic vein obstruction.[11] This configuration of obstruction usually results from thrombosis from a variety of causes[12] but may be the result of extrinsic compression or invasion without resultant thrombosis. A list of causes[12] must include carcinoma of the pancreas, stomach, or esophagus; enlarged lymph nodes; pressure by benign lesions, such as chronic pancreatitis; retrogastric hematoma due to trauma; large aneurysm of the splenic artery; splenectomy and occasionally gastrectomy sequelae;[13] certain hematologic conditions, such as polycythemia and rarely thrombocythemia; and sequelae to oomphalitis in children.[5]

Cooper and his associates[14] showed total obstruction of the splenic vein occurring in 2 out of 3 cases of carcinoma of the body or tail of the pancreas, but warned that this finding must be cautiously interpreted since it has been observed in apparently normal patients. Molnar, Riebel, and McCormick[12] report that only a single instance of splenic vein thrombosis, splenoportographically demonstrated, had been reported prior to their series of three cases, of which none proved to be carcinoma of the pancreas.

Molnar, Riebel, and McCormick[12] also mention a frequent anastomotic channel in complete obstruction of the splenic vein as being via the perisplenic and retroperitoneal veins into the portal system. However, Shinz, Glauner, and Vehlinger[15] report reflux as taking place either predominantly to the upper sources of the splenic and portal veins (perisplenic, short gastric, or coronary) or essentially into the lower stream bed (superior and inferior mesenteric, the pancreaticoduodenal, the gastroepiploic, and the pancreatic veins).

In the case presented, the gastroepiploic and retroperitoneal vessels constituted the major collaterals carrying blood to the portal vein. However, Cooper and his associates[14] claim that when there is no splenic vein visible, the collaterals may carry the dye via the gastric veins to the coronary veins and finally to the portal veins.

The fact that the pancreatic tributaries of the splenic vein have virtually no extraglandular course[16] makes it apparent that malignant invasion of these tributaries must be suspected when an extensive collateral circulation, with splenic vein obstruction, does not include these pancreatic vessels in the total collateral constellation. Unfortunately, however, the visualization of patent pancreatic veins in portal hypertension presents a difficult problem in roentgen identification.

Two other signs of extrahepatic portal block have been suggested: These are decreased opacity distal to the obstruction and slow emptying time of the veins proximal to the obstruction.

Conclusions

Although the literature on percutaneous splenoportal venography is already voluminous, there have been no monographs up to January 1959 that dealt specifically with the portographic findings in carcinoma of the pancreas, whether it be of head, body, or tail location. Many investigators[2,7,10,11,17,18] have mentioned the value of this roentgenographic procedure as an aid to the diagnosis of pancreatic tumors but very few have documented cases presenting carcinoma of the tail of the pancreas.

We believe that this is one of the few reports of a case of splenic vein obstruction due to carcinoma of the pancreas, demonstrated portographically. We hope that this presentation and discussion will not only support the value of splenoportography in retroperitoneal pathologic conditions, but will also show the need for a review of splenoportographic findings in a large series of cases of carcinoma of the pancreas, especially of the body and tail.

Summary

An outline of possible indications for percutaneous splenoportography has been given. The splenoportographic findings in a case of carcinoma of the tail of the pancreas have been presented. The literature has been reviewed, with reference to collateral circulation and configuration in splenic vein obstruction, especially in carcinoma of the tail of the pancreas.

300 Spruce Street

Acknowledgment

We wish to express our appreciation to Dr. Samuel Santaspirt for making the line drawings.

1. Figley, M. M.: Splenoportography: some advantages and disadvantages. Am. J. Roentgenol. 80:313-323, Aug. 1958.
2. Figley, M. M., *et al.*: Percutaneous splenoportography. Gastroenterology 28:153-162, Feb. 1955.
3. Bonte, F. J., Weisberger, A. S., and Piavello, C.: Evaluation of portal venography performed by intrasplenic injection of contrast material (splenography). Radiology 66:17-23, Jan. 1956.
4. Turner, M. D., Sherlock, S., and Steiner, R. E.: Splenic venography and intrasplenic pressure measurement in clinical investigation of portal venous system. Am. J. Med. 23:846-859, Dec. 1957.
5. Bruwer, A. J., and Hallenbeck, G. A.: Roentgenographic findings

in splenic portography. Am. J. Roentgenol. 77:324-331, Feb. 1957.
6. Evans, J. A., and O'Sullivan, W. D.: Percutaneous splenoportal venography; utilizing rapid serial roentgenography. Am. J. Roentgenol. 77:312-323, Feb. 1957.
7. DeWeese, M. S., *et al.*: Clinical appraisal of percutaneous splenoportography. A.M.A. Arch. Surg. 75:423-433, Sept. 1957.
8. Ruzicka, F. F., Jr., Bradley, E. G., and Rousselot, L. M.: Intrahepatic vasculogram and hepatogram in cirrhosis following percutaneous splenic injection. Radiology 71:175-186, Aug. 1958.
9. Rousselot, L. M., Ruzicka, F. F., Jr., and Doehner, G. A.: Portography in portal hypertension, its application in diagnosis and in surgical planning. S. Clin. North America 36:361-383, April 1956.
10. Fuld, H., and Irwin, D. T.: Clinical application of portal venography. Brit. M. J. 1:312-313, Feb. 6, 1954.
11. Johnston, E. D.: Percutaneous splenic portography or splenic portal venography. Proc. Coll. Radiologists, Australasia 1:3-9, June 1957.
12. Molnar, W., Riebel, F. A., and McCormack, K. R.: Splenic vein thrombosis: three cases. Radiology 70:684-691, May 1958.
13. Quan, S., and Castleman, B.: Splenic-vein thrombosis following transthoracic gastrectomy and incidental splenectomy. New England J. Med. 240:835-837, May 26, 1949.
14. Cooper, D. R., *et al.*: Splenoportography. Ann. Surg. 138:582-590, Oct. 1953.
15. Schinz, H. R., Glauner, R., and Uehlinger, E.: Roentgen-diagnostics; progress: volume I (1952-1957). Grune & Stratton, New York, 1958.
16. Falconer, C. W. A., and Griffiths, E.: Anatomy of blood-vessels in region of pancreas. Brit. J. Surg. 37:334-344, Jan. 1950.
17. Hurwitt, E. S., *et al.*: Gastrointestinal bleeding due to splenic vein obstruction by pancreatic tumors. A.M.A. Arch. Surg. 68:7-11, Jan. 1954.
18. Bergstrand, I., and Ekman, C. A.: Percutaneous lieno-portal venography: technique and complications. Acta radiol. 47:269-280, April 1957.

Bergstrand, I., and Ekman, C. A.: Portal circulation in portal hypertension. Acta radiol. 47:1-22, Jan. 1957.
Bergstrand, I., and Ekman, C. A.: Lieno-portal venography in study of portal circulation in dog. Acta radiol. 47:257-268, April 1957.
Child, C. G., III, and Donovan, A. J.: Current problems in management of patients with portal hypertension. J. Am. M. A. 163:1219-1229, April 6, 1957.
Doehner, G. A., *et al.*: Portal venous system: its roentgen anatomy. Radiology 64:675-689, May 1955.
Doehner, G. A., *et al.*: Portal venous system: on its pathological roentgen anatomy. Radiology 66:206-217, Feb. 1956.
Levine, S.: Hemangioma of liver diagnosed by splenoportography. Am. J. Roentgenol. 77:332-333, Feb. 1957.
Lubitz, J. M., and Scott, D. W., Jr.: Banti's syndrome with multiple aneurysms and thromboses of splenic blood vessels. Ann. Int. Med. 26: 594-599, April 1947.
Mikkelson, W. P., and Pattison, A. C.: Splenoportography in portal hypertension; its value in selecting operative procedure of choice. California Med. 86:235-241, April 1957.
Rousselot, L. M., Ruzicka, F. F., and Doehner, G. A.: Portal venography via portal and percutaneous splenic routes; anatomic and clinical studies. Surgery 34:557-569, Sept. 1953.
Somers, K.: Cavernous transformation of portal vein following umbilical sepsis. Brit. M. J. 2:335-336, Aug. 10, 1957.

Rationale and indications for digitalization of the surgical patient

LENNERT L. LORENTSON, D.O., Detroit, Michigan

An extremely significant percentage of the deaths occurring in the operating and recovery rooms could be prevented by the use of digitalis. This belief is based upon impressions and observations derived from patients treated with digitalis—some prior to operation, the majority during operation, and a few in the postoperative period. It became apparent to me that the literature on this subject is sparse; to my knowledge the immediate signs and symptoms accompanying decompensation occurring with surgery and anesthesia have not been adequately described.

Sadove and Cross[1] give seven indications for digitalization in the operating room or recovery room. I believe it is possible to indicate the need for digitalis by other signs, without in each instance establishing one of the seven categories. These signs and symptoms will be briefly discussed, as will each of the indications for digitalization given by Sadove and Cross.

Cardiac decompensation

Before discussing use of digitalis preparations, a brief review of some features of cardiac decompensation is desirable. The term "cardiac decompensation" is one which usually conveys a rather definite thought which includes impressions ranging from marked to moderate symptoms of dyspnea, orthopnea, cyanosis, pulmonary edema, peripheral edema, tachycardia, and cardiac enlargement. In most instances the impression conveyed is one of obvious, rather dramatic symptomatology. However, these cases of obvious cardiac decompensation are not the stimulus for this paper. Before congestive heart failure develops—that is, before fulfillment of any diagnostic criteria for cardiac decompensation—there must be a period of diminishing cardiac reserve. The cardiac reserve is adequate only for progressively

lesser stress; from the symptom of exertional dyspnea to advanced cardiac decompensation, many years and varied symptomatology usually intervene. Anesthesia and surgery may telescope these developments into hours or minutes.

The rationale for use of digitalis during anesthesia in a patient who is in apparent good health, who has been performing daily labors with few or no untoward cardiorespiratory symptoms, is based upon some unavoidable as well as avoidable effects of surgery and anesthesia. Any of the myriad factors which effect a decrease in oxygenation of blood may be significant to a heart that ordinarily requires near-maximum oxygen saturation of the blood it receives to maintain stable effectual contractions.

Some of the well-understood mechanisms which result in loss of cardiac compensation are anoxia, hypercapnia, and blood loss, all of which compel the heart to work harder or faster in an attempt to compensate for or to correct these aberrations. These three mechanisms are corrected, obviously, in direct fashion, and not via digitalization. Somewhat less commonly considered are surgical effects on cardiorespiratory function. Mechanical obstruction to circulation is common and significant; witness the frequency of lifts, packs, retractors, and enthusiastic surgical assistants that restrict the patient's respiratory efforts by exerting pressure on the diaphragm and chest and impeding blood flow by pressure on major blood vessels. Prolonged operations and blood loss put the patient under greater stress and keep the heart working harder for a prolonged period. Some positions required by surgery are deleterious. The lateral position splints one side of the chest, decreasing aeration. The Trendelenburg position compresses the diaphragm, decreasing aeration and increasing return of lower extremity blood, which tends to cause a circulatory overload.

Less commonly considered, but in my opinion and experience frequently precipitating cardiac decompensation, is increased intrapulmonic pressure. Consider this thought in relation to borderline cardiac compensation: In normal respiration, inspiration is accompanied by decreased or negative intrapulmonic pressure, tending to dilate the pulmonary alveolar capillaries, increasing the surface for oxygenation and allowing the right heart to propel the blood more easily toward the left atrium. During exhalation a low positive pressure expels the tidal air. Now consider this patient: No rales, no dyspnea, no edema, no overt symptoms, and a heart working near its maximum efficiency to keep minimal (but to the patient, normal) activity going. The patient knows his limitations and avoids effort of sufficient scope to cause difficulty, or quickly rests if he exceeds his usual limits, thereby correcting his own trend to decompensation. Now, if his intrapulmonic pressure is increased—by airway obstruction, by use of positive pressure, from valve resistance of the anesthesia machine, from weight of the columns of gases in the anesthesia circuit; thereby compressing the alveolar capillaries, decreasing the available oxygenating surface, and increasing the pressure in the pulmonary arteries—the right heart must work harder to overcome this resistance and propel the blood through the lungs to the left atrium. Therefore, the individual amount of cardiac reserve will determine whether decompensation will occur with a given amount of increased intrapulmonic pressure.

Fluids are a frequent cause of cardiac failure in surgical as well as medical patients. Inherent in operative treatment is fluid and blood loss. Ideally, replacement of fluids as lost, both qualitatively and quantitatively, would obviate this difficulty (that is, increased or decreased blood volume). However, even with a procedure requiring minimal anesthesia, it becomes self-evident that our estimates of fluid and blood loss are frequently wrong. By overestimating the patient's loss an excess of fluids, blood, plasma, or plasma expanders is given. The excess of circulating blood volume which a patient will tolerate would be determined by the patient's individual myocardial reserve. A considerable excess can be given if the myocardial reserve is great, but a minimal excess may initiate failure in a heart of low reserve or one burdened by other stresses.

With illness the occurence of fatigue and generalized muscular weakness is common; it seems illogical that the cardiac musculature should be considered immune to that fatigue.

Frequently a summation may occur, in which two or perhaps several factors produce decompensation, whereas singly they would not.

The history and physical examination frequently give evidence that the patient has a low cardiac reserve and is a possible candidate for myocardial failure. However, in the brief time allowed for reviewing patients prior to operation, it is frequently difficult to properly assess and ascribe symptoms and findings to primarily pulmonary or cardiac origin. (The patient is hospitalized for operation. Any complaints or findings referable to the cardiorespiratory system are usually unrelated to the contemplated operation. Neither the patient nor his doctor is desirous of investigating what they consider insignificant findings or symptoms.) Many of the symptoms and findings of pulmonary and cardiac disease are identical. Cardiac and pulmonary pathologic states are frequently found to coexist. Many pulmonary diseases ultimately cause cardiac change, and the patient dies of cardiac complications; for example, most severe asthmatics die of congestive heart failure.

In brief, the following symptoms or findings constitute a framework upon which to build suspicions of the possibility of failure. The patient's history may be of rheumatic fever, myocardial infarction, long-standing pulmonary disease, orthopnea, dyspnea from mild exertion, or nocturnal dyspnea. Physical examination may show obesity, hypertension, edema, tachypnea, basilar rales, tachycardia, or pulsus alternans. Chest x-ray frequently shows cardiac enlargement, and an electrocardiogram may demonstrate cardiac hypertrophy. Vital capacity, venous pressure, and circulation time are valuable simple aids. Anemia and low serum proteins must be noted as they affect the blood pressure somewhat similarly to loss of cardiac compensation. The patient may present none of the aforementioned symptoms or findings

and yet require digitalization during surgery. Significant findings should be noted preoperatively and related to findings and observations during the operation, so that preparations for digitalization are not unnecessarily delayed.

Signs of decompensation during operation

When the patient is conveyed to the operating room, additional suggestions of incipient failure may be noted. The sedated surgical patient may present respiratory depression (rate and tidal volume out of proportion to the dosage administered). The respiration may be Cheyne-Stokes in nature or without pattern; Cheyne-Stokes respiration is common in early failure. The patient may be hypotensive and often shows pulsus alternans or other irregularity. *Preoperative* hypotension is not too significant unless the patient was previously hypertensive. Pulsus alternans, Cheyne-Stokes respiration, and disproportionate sedative effects are significant. Pulmonary edema and cyanosis would be extremes which hardly require mentioning.

However, to recognize the onset of myocardial decompensation during surgery is the *sine qua non* of this paper. Not always are there preanesthetic warnings. The added stress of the surgical milieu may precipitate failure in a person who is in apparent good health. The patient may have presented no difficulty with previous, even recent, surgery; therefore, one should not assume that any particular patient is immune to myocardial failure. A combination of stresses may be of sufficient moment to induce failure.

Pulmonary edema warrants first mention primarily to dispel the popular notion that it is the sign, or at least the important sign, of myocardial failure during anesthesia. It is not; reliance upon it is a grave error. Death via asystole would frequently precede it. The use of general anesthesia, by its positive pressure, tends to prevent pulmonary edema as a manifestation of cardiac failure. Spinal or conduction anesthesia, by its sympathetic block and consequent pooling of blood in the lower extremities, acts as bloodless phlebotomy, decreasing venous return to the heart—and thus should, at least in theory, decrease the tendency to failure and pulmonary edema. However, other factors predisposing to failure remain significant; I have seen failure occur in patients with spinal anesthesia as the only method used. Pulmonary edema, however, has occurred when a ventilator and negative pressure were utilized.

Hypotension in decompensation during anesthesia is of a rather typical pattern and is the critical reason for digitalization in most cases. The blood pressure will fall repeatedly, gradually or rapidly descending (probably related, at least partially, to myocardial reserve). It will respond to vasopressors but will not stabilize, tending to fall at shorter and shorter intervals after each dose of vasopressor. The pulse pressure tends to decrease.

Pulsus alternans is a relatively early sign of ensuing failure, frequently preceding significant hypotension. It may be the classical strong-weak-strong-weak pattern or it may be noted as having variable intensity over several beats. It is often first and most easily noted on auscultation of the blood pressure. It is an early and important sign of failure if it develops during operation. If it is present preoperatively as a variable intensity of pulse it is of less significance. Typical pulsus alternans, however and whenever, must be considered a sign of incipient failure.

The pulse rate is typically, though far from constantly, variable. The rate should not be considered particularly significant if other signs are not also present. Failure may occur with a slow pulse, a normal pulse, or a rapid pulse.

The respiratory rate and character may or may not afford an indication of failure. In some cases there is Cheyne-Stokes respiration; others are without pattern; and still others are of seemingly normal rate and pattern. Depressed rate or tidal volume is also found at times. Cheyne-Stokes respiration should be considered significant evidence; when it occurs with other evidence, such as pulsus alternans or recurring hypotension, it rather conclusively indicates failure.

The patient's color is frequently satisfactory, although it is extremely significant if cyanosis is evident without one of the usual causes of cyanosis during anesthesia.

An important sign in differentiating myocardial failure from other causes of hypotension and alterations in pulse is that in failure the veins are engorged or full, rather than collapsed. This is very significant and is constant unless decompensation is accompanied by other complications.

In general anesthesia the anesthesia level is difficult to maintain. Patients may quickly alternate from seemingly light to deep planes of anesthesia, out of proportion to the anesthesiologist's ministrations. Here the respiratory rate may be variable: deep, irregular, even apneic. Postoperative depression and delayed reaction are common.

The seven indications of Sadove and Cross[1] for digitalization in the operating and recovery room are listed below in italics, accompanied by brief comment:

1. *Myocardial damage after cardiac resuscitation.* To establish myocardial damage after cardiac resuscitation requires electrocardiographic evidence, which is not always immediately or even readily available. In cardiac arrest it is my belief that lanatoside C (Cedilanid) should be given immediately after intratracheal intubation; then other agents may be given if needed. I strongly suspect cardiac arrest is initiated by occult cardiac decompensation in the majority of cases.

2. *Shock refractory to usual therapy.* The usual therapy is a variable thing. If therapy with blood, plasma, or plasma expanders is given to a patient who needs digitalis it is not difficult to foresee death via circulatory overload.

3. *Congestive heart failure, with or without associated myocardial infarction.*

4. *Dyspnea or bronchospasm of cardiac origin, even without obvious failure.* Dyspnea and bronchospasm occur in anesthesia not altogther infrequently,

and whether they are cardiac in origin is probably difficult to establish readily.

5. *Tachycardias—auricular fibrillation, auricular flutter; sinus and nodal tachycardia, if there is suspicion of antecedent disease.* There are many causes of tachycardia, and antecedent disease evidence may be lacking.

6. *Cyanosis unrelieved by adequate ventilation with oxygen, particularly in patients with cardiac disease.* Proof of cardiac disease should not be required.

7. *Cardiac enlargement or electrocardiographic evidence of left ventricular strain before or during thoracic surgery.* There is little logic in restricting this to thoracic surgery. Cardiac hypertrophy is adequate reason for digitalization *preoperatively* as well.

To this list I would add the following comment which seems to have more immediacy:

To summarize the immediate signs of cardiac decompensation occurring during surgery and anesthesia, the most significant signs are recurring hypotension, variable pulse intensity, or forcefulness (typically as pulsus alternans) with full or engorged veins. Other important signs are variable pulse rate, irregular respiratory pattern, difficulty in maintaining a stable anesthesia level, deterioration of color, and diminution of pulse pressure. Least important is the occurrence of pulmonary edema; this is a very late sign, and death by cardiac arrest would occur before pulmonary edema in many, probably the majority, of instances.

Treatment

In many instances, a patient who has suffered cardiac decompensation during an operation may be brought through without digitalization. Repeated doses of the usual vasopressors or cardiac stimulants may be adequate. With decreased stress on the heart, the patient may proceed with a relatively normal convalescence. However, some patients' cardiac reserve is so minimal that they must be digitalized to survive the operation. Others may show minimal signs of decompensation during surgery, but have a very unstable postoperative course until they are digitalized.

Thus it is apparent that the decision for digitalization does not follow an absolute rule; frequently, while digitalization may be desirable, it is not imperative. The decision generally is not one of extreme urgency, although the more rapidly the signs of failure develop and the more alarming their nature, the greater is the need for quick digitalization. If the blood pressure is falling rapidly or is extremely low, a vasopressor or cardiac stimulant should be given to tide the patient over the first 5 minutes or so until the digitalis takes effect. In cardiac arrest, I believe that digitalization should be carried out immediately after intratracheal intubation, while cardiac massage is performed by the surgeon, then proceeding to other agents.

I use intravenous lanatoside C (Cedilanid) for rapid digitalization of adults. (Digoxin is kept available for children but so far I have not had occasion to use it.) I use lanatoside C in the following simple manner: For the average adult (150 lbs.) an initial dose of 0.8 mg. is administered slowly by the intravenous route. After a 5-minute wait, if the pressure is not stabilizing or is still deteriorating, an additional 0.4 mg. of lanatoside C is given intravenously. If the desired effect is not obtained in another 5 minutes, I would give 0.2 mg. doses up to 1.4 or 1.6 mg. Generally, the dosage seems to be closely related to 0.4 mg. of lanatoside C per 75 pounds of body weight for a salubrious effect. This schedule of 0.4 mg. per 75 pounds is not generally considered a digitalizing dose for lanatoside C; however, I have found that it has a definite effect within 5 minutes when used intravenously. I have had no disastrous effects from this dosage. One patient's arrhythmia was intensified slightly, but otherwise it has been without deleterious effect; it has undoubtedly aided the convalescence of many and saved the lives of a few.

Whether digitalization should be maintained in the postoperative period is a matter for individual consideration. However, it would seem judicious to complete and maintain digitalization through the first 4 or 5 days.

Summary

Inherent in anesthesia and surgery are factors initiating cardiac decompensation. Likely candidates for cardiac decompensation are predictable to a certain extent. The more frequent use of digitalis during operations and in the immediate postoperative period could undoubtedly save many lives. Elimination of pulmonary edema as an essential criterion for the diagnosis of cardiac decompensation would encourage more frequent use of digitalis. Digitalis is as essential among anesthesia supplies as are vasopressors, and in fact warrants consideration as the ultimate vasopressor. Treatment of decompensation during anesthesia in simplest elements consists of immediate administration of a vasopressor (unless blood pressure is not alarmingly low); then lanatoside C, 0.8 mg., administered slowly, for the average adult. Lanatoside C has been without notable deleterious effects in my experience and usage.

Zieger Osteopathic Hospital, 4244 Livernois Ave.

1. Sadove, M. S., and Cross, J. H: Recovery room; immediate postoperative management. W. B. Saunders Co., Philadelphia, 1956.

Injuries involving the elbow*

DANIEL T. FRIDENA, JR., D.O., Phoenix, Arizona

The elbow is the hinged joint that makes the arm a flexible mechanism capable of a wide variety of actions. In performing its normal functions this joint relieves stress in the shoulder and augments the range of motion of the hand. It not only helps in heavy weight-lifting but also makes possible such commonplace but intricate activities as eating a meal, combing the hair, tying a necktie, or buttoning a coat. Stability, with rare exceptions, is of less importance than is motion for a useful elbow. Therefore, in treating a severely injured elbow the orthopedic surgeon's major problem is to restore function as far as possible, rather than merely achieving normal anatomic appearance. An elbow in which the x-ray films show perfect anatomic alignment may be stiff and nonfunctional because of prolonged immobilization or overstrenuous treatment.[1] In some instances it appears that the surgeon is more interested in treating the x-ray picture than the patient.[2]

Restoration of function is especially difficult when ankylosis has occurred in the injured elbow. It may be possible to restore some degree of motion by physical or surgical treatment, but if the damage is great, surgical immobilization may be necessary. In such cases it is important that the elbow be fixed in the most favorable position from the standpoint of function. Normally the elbow can flex the arm to an angle of 30 to 35 degrees or extend it to a straight angle of 180 degrees. The immobilized elbow is usually best fixed at a 90-degree angle, but for some occupations an angle of 135 degrees may be preferable.[3] If both elbows are involved, the surgeon might consider immobilizing one at about 80 degrees and the other at about 125 degrees.

Thorough knowledge of anatomic structure and mechanical principles is important for the successful treatment of injuries involving the elbow. Since such injuries occur much more frequently in children than in adults, accurate knowledge of the anatomy of the child at various ages is especially important. Such knowledge forms the basis for competent evaluation of function, and to salvage as much function as possible is the guiding principle in treatment.

*Presented at the annual meeting of the American Osteopathic Academy of Orthopedics, Boston, Massachusetts, October 28, 1958.

General considerations of fractures

Fractures of the elbow may be supracondylar or they may involve the condyles, olecranon, or the head and neck of the radius. Other injuries in this area include various types of dislocation with or without associated fracture.

In examining the injured elbow, it is important to compare its appearance with that of the uninjured elbow, as an aid in evaluating swelling and deformity. Also, every orthopedic surgeon should be able to identify the three major "bony landmarks"[1,4] in the elbow: the tip of the olecranon and the two epicondyles of the humerus. When the elbow is at an angle of 90 degrees, these three points normally form a well-defined triangle, and when the arm is extended they lie in a straight line. Abnormalities in the relationship between these points and in their relationship to the humerus will not indicate specific treatment but may be of diagnostic significance. Next, the humerus should be tested for false motion, and the elbow gently palpated for points of tenderness and tested with regard to flexion, extension, and lateral stability.

Adequate x-ray examination is necessary not only in diagnosis but in the subsequent evaluation of the success of treatment. If the patient is a child, it is wise to make x-ray films of both elbows for purposes of comparison. Although the general appearance of the joint is the same in children as in adults, the variations in ossification and in epiphyseal development in children can lead to confusion if the surgeon does not first determine what is normal for the child in question. If one remembers that the capitellum appears at 1 year, the head of the radius and the medial epicondyle at approximately 5 years, the olecranon at 8 years, the trochlea and lateral epicondyle at ap-

proximately 12 years, and that x-ray films of the uninvolved elbow should be made, then confusion in diagnosis may be avoided. If x-rays in a child fail to show a fracture, one should be cautious about diagnosing the injury as a sprain, since it is much more likely that epiphyseal cartilage has been damaged. When this condition goes undetected, serious disturbance in growth may result.

In examining the patient it is important to search for evidence of nerve damage. The sensory distribution of the ulnar, median, and posterior interosseus nerves should be tested for numbness, hypesthesia, pain, and hyperesthesia. Motor functions of these nerves should be tested also, and compared with those in the opposite hand. If nerve lesions are not detected before treatment is started the resultant damage may be difficult to correct by modified treatment.

If the elbow is extremely swollen and the radial pulse at the wrist is reduced or absent, this is a sign of serious impairment of circulation and extravasation of blood into the muscles and ligaments, particularly around the brachialis anticus muscle. Immediate reduction of the fracture must be carried out in order to prevent Volkmann's contracture, which may begin to develop within a few hours after injury.

Usually the surgeon can determine the type of injury by means of the physical examination; x-ray films complete the information and indicate the appropriate method of treatment. For differential diagnosis, the following physical signs have been found helpful[4] in identifying the more common types of injury to the elbow: 1. Backward or upward displacement of the tip of the olecranon indicates posterior dislocation of both bones at the elbow, with or without associated fracture, or fracture of the olecranon itself. 2. Abnormal distance between the epicondyles, which can be squeezed together or moved independently, indicates intercondylar or T fracture of the humerus. 3. Backward displacement of the epicondyles and olecranon indicates an extension type of supracondylar fracture of the humerus. 4. Pain on rotation of the forearm, when the head of the radius can be palpated in its normal position, indicates a fracture of the head or neck of the radius. 5. When the head of the radius is found in an abnormal position it is probably dislocated anteriorly. 6. In a small child, if there is pain and tenderness over the head of the radius with sharp limitation of supination, there is subluxation of the head of the radius.

Moderate swelling, disability, and tenderness, with negative x-ray findings, probably indicate a sprain, although this does not often happen in the elbow.

Paralysis may result from pressure on the ulnar nerve, or stretching or dislocation of the nerve at the time the elbow is injured. In Childress' series of cases[5] of dislocation of the ulnar nerve, 6 patients had neuritis resulting from direct trauma to the flexed elbow; 2 of these were successfully treated by surgical transfer of the nerve. McGowan[6] reported 6 cases in which superficial transfer of the ulnar nerve had not been successful, and which were corrected by reoperation with deep implantation. Gay and Love[7] successfully carried out deep implantation of the nerve in 95 cases. Because of the close proximity of the ulnar nerve to the medial epicondyle of the humerus, the possibility of nerve damage should always be kept in mind if there is a fracture in this area.

Volkmann's ischemic paralysis and contracture is an extremely serious condition that may lead to considerable disability. In extensive injury to the joint capsule and muscles, massive hemorrhage causes inflammation marked by cellular infiltration and edema, with the swelling so great as to seriously impair the venous and lymphatic circulation. The hemorrhage and swelling exert tremendous pressure, which must be relieved at once if severe permanent contracture in the hand and forearm is to be avoided. Since it may take 10 to 14 days for the swelling to subside, the surgeon should not wait for this, but should attempt reduction of the fracture immediately.

Even moderate damage to the soft tissue may lead to hemorrhage and exudation and thus to the formation of fibrous tissue which greatly decreases muscle elasticity and the mobility of the joint. Therefore it is important that the surgeon exercise caution in determining the proper treatment. Baab[8] says that one of the most frequent errors in treatment has been the passive stretching of the post-traumatic elbow joint to speed motion, but that this only decreases motion by production of serofibrinous exudate, adhesions, and fibrosis.

A fracture running into the joint but not rupturing the capsule results in hemorrhage into the joint and extreme distention of the capsule. Severe pain limits motion and should be relieved by careful aspiration of the joint.

Ecchymosis appearing just above the antecubital fossa soon after the injury indicates that a fragment of the humerus has been forced through the brachialis anticus muscle and its fascia so that the sharp edge is caught in the under surface of the skin. In some cases the bone penetrates the skin, making a wound that is easily contaminated and infected.

Danger to circulation may occur when the brachial artery and veins are injured by displacement of bony fragments, by motion at the fracture site while a patient is being transported, by rough or hurried reduction of the fracture, by immobilization in an acutely flexed position, or by the use of tight casings or splints and bandages.[1] Circulatory embarrassment can be improved or avoided by early and accurate reduction of the fracture, done gently under anesthesia, followed by moderate evaluation of the injured arm, early cautious active motion, and frequent examination of the circulation of the entire extremity.

First-aid treatment should be directed toward reducing the risk of further injury in the interim before x-ray diagnosis can be made and treatment procedures determined. If the surgeon finds that the injury is obviously a simple dislocation, however, he may be able to reduce it at once, by simple traction and under the natural anesthesia resulting from local tissue shock. Injuries to athletes can sometimes be treated on the field with less trauma than would result from taking the patient to the hospital before treatment is attempted; in any case, x-ray examina-

tion should be carried out as soon as possible, to confirm the extent of injury. On the other hand, if there is an obvious displaced fracture the elbow should be splinted and no attempt at reduction made until examination has been completed.

Any bleeding in the elbow area suggests a compound fracture, in which case the wound should be covered with a sterile dressing, the elbow protected by splinting, and the patient taken to a hospital as soon as possible. A compound wound of the elbow is very serious and should be treated with the least possible delay, but only in an operating room under strict aseptic conditions and with the supervision of an orthopedic surgeon. If the bleeding is severe a tourniquet should be applied, over 1-inch padding in order not to damage the underlying nerves and blood vessels. Since the tourniquet must be tight enough to obliterate the arterial pulse, it can safely be kept in place for not more than an hour, and the arm below the tourniquet should be examined frequently during this period.

Specific treatment procedures

There are three main types[4] of fracture of the lower end of the humerus: extension, flexion, and intercondylar, T, or comminuted. Extension fracture and epiphyseal separation occur most commonly in injury to the elbow, and especially in children. The fractures are either supracondylar or transverse dicondylar, depending on the location of the fracture line, and they usually result from falling on the hand with the elbow flexed. The flexion type is caused by falling on or hitting the flexed elbow itself, and the intercondylar or T fractures occur through hyperextension or thrust injuries or direct trauma. Intercondylar fractures are quite rare in children but common in adults; the "car-window" fracture is an example of a severe type.

Supracondylar fracture • The successful treatment of supracondylar fracture depends on accurate reduction, stable fixation, and prolonged and careful follow-up care. The three most used procedures are: 1. manipulative reduction and fixation in a plaster splint with a collar and cuff sling, 2. open reduction and fixation, and 3. sustained traction. Borchgrevink,[9] a Norwegian surgeon, was one of the first to recommend traction, and Philippides[10] advised reduction of supracondylar fractures by mechanical traction. Böhler[11] devised a method of treatment which combines reduction and a plaster cast incorporating constant traction. Dunlop[12] recommended a method of suspension and abduction traction useful in treating severe fractures in young children in whom manipulative reduction cannot be used. Allen and Gramse[13] modified Dunlop's traction for use temporarily when there is excessive swelling and threatened vascular embarrassment. Miller and his co-workers,[14] and later Maylahn and Fahey,[15] used skeletal traction through the olecranon. Others, such as Holmberg,[16] have opposed this type of treatment because of the risk of infection or unsatisfactory results, advocating instead surgical operative treatment. Hoyer[17] has advocated closed reduction of the fracture followed by a small hook-clip in the olecranon; the arm is then placed in an abduction splint and traction maintained by means of rubber tubing. Madsen[18] devised a form of reduction by traction with the elbow at 135 degrees, followed by manipulation when necessary, then immobilization in a shoulder spica cast.

The exact site of the supracondylar fracture makes little difference, for in any case the treatment consists of reduction and immobilization in flexion, usually under general anesthesia.[2] Even when there is extreme displacement, excellent results are obtained if the fracture is treated early, before swelling has become significant. If treatment has been delayed and there is marked swelling, traction should be applied with the arm in slight flexion, rather than attempting manipulative reduction. After a few days of elevation, traction, and the administration of hyaluronidase and trypsin, the swelling usually subsides and reduction may be carried out. During and after manipulation of the elbow, supracondylar rotational and angular deformities must be carefully looked for by means of fluoroscopy and x-ray. If the x-ray films show rotational displacement, a second reduction should be attempted. Only in very young children will angulations be corrected by subsequent growth.

In immobilizing the arm after reduction of the fracture, the degree of flexion should be carefully determined so as not to interfere with venous return; usually the angle is a little less than 90 degrees. Circulation in the hand should be checked every hour, and at any sign of impairment the dressings should be loosened and the angle of flexion changed. An absent radial pulse is a dangerous sign, but not an indication for exploration of the antecubital fossa if the capillary circulation in the hand and fingers remains adequate.

If the fracture shows negligible or moderate displacement, the arm may be held in a posterior plaster mold with a Jones sling. In severe fractures that have been reduced, a light plaster spica cast may be used along with the posterior mold, after the method of Eliason.[19] Under no circumstances should the arm be placed in a circular plaster cast extending from the upper arm to the wrist and hand. With such a cast it is impossible to observe the swelling at the elbow, which in most cases continues to increase during the first 24 to 48 hours, and Volkmann's contracture may develop before the danger signs are noted.

The displaced intercondylar and comminuted types of supracondylar fracture are especially serious and cannot usually be corrected by manipulation and casting. Internal fixation is sometimes successful, but often results in permanent restriction of motion and therefore is not recommended. The best treatment is suspension and traction, such as Dunlop's traction,[12] Kirschner wire traction through the olecranon (described by Carli[20]), hook-clip traction through the olecranon, or screw traction through the proximal ulna. The last method offers less possibility of injury to the ulnar nerve. The traction is applied under local or general anesthesia after the fragments have been positioned by manipulation. After 2 to 5

weeks of traction, with x-ray examinations at intervals, the arm is placed in a posterior plaster mold and supported in a sling.

During the period of immobilization, physiotherapy can be instituted, beginning with finger, thumb, and shoulder exercises, followed by fist exercises and then active elbow motion under the supervision of the orthopedic surgeon. After the period of immobilization, further treatment consists of daily hot soaks and mild active use of the elbow. Passive motion, forceful massage, and undue forcing of active motion are potentially harmful and should not be used.[2]

With regard to the complications following supracondylar fractures—chiefly Volkmann's ischemic paralysis and contracture, myositis ossificans, and nerve injuries—it should be remembered that the best treatment is prevention. If signs of Volkmann's ischemia appear and are not relieved by changing the angle of flexion, sympathetic nerve block of the stellate ganglion and aspiration of the hematoma in the elbow may be effective. If conservative measures fail, no time should be lost before exploring the antecubital fossa on the volar aspect of the forearm. Resection of the damaged section of the artery should be followed by procaine block of the stellate ganglion, to increase the collateral circulation.[21] In cases of myositis ossificans, on the other hand, the treatment consists largely of watchful waiting. This condition tends to increase for 6 to 9 months and then to regress; by the end of a year, most patients will have regained full use of the elbow. Any surgical treatment during the early period will only bring about more extensive ossification, in most cases. Serious limitation of elbow function persisting after a year may be treated by surgical removal of the bone formation. Ultrasonic therapy may hold promise but is still relatively new and untried. Paralysis from individual nerve injuries is also temporary in most cases; spontaneous recovery is the rule. Seddon[22] states that nerve injuries are usually the result of neurapraxia or contusion and seldom require surgical exploration. If loss of function persists, however, the surgeon should consider appropriate surgical measures, such as transplanting the nerve to remove it from the site of irritation in the injured elbow.

Fracture of the lateral condyle • Most of these fractures result from falling on the hand, with the elbow slightly bent. The injury is often mistaken for a sprain, especially in children who still lack the capitellar osseous center. In some cases there is only slight initial displacement of the broken parts and the soft tissues may suffice to hold the fragment in position. Since delayed displacement often occurs, however, x-ray films should be made at intervals after the injury. If pretreatment x-ray films show rotational deformity, open reduction of the fracture may be necessary, since the displacement cannot usually be corrected by manipulation or traction. The method of treatment depends on the amount of displacement and the time elapsed since the injury occurred. Within the first few hours, a perfect reduction may be accomplished by manipulation, especially if the fragment is large, or if there is a simple crack with no displacement of the external condyle. The elbow is then put into flexion and supination and suspended by a Jones sling, in the manner described for supracondylar fractures. If closed reduction is not successful, open reduction should be carried out promptly; a delay may necessitate removing so much of the soft-tissue attachment that necrosis of the bone fragments will occur.

Open reduction of lateral condylar fractures, when this is the initial treatment, rarely results in growth retardation or limitation of motion. Results are less satisfactory when the operation is performed only after conservative measures have failed. When the fracture has been reduced by the open method, the fragments are fixed in place with a screw or with Kirschner wires driven through the fragments; the wires are easily removed after healing is complete. External fixation is accomplished by means of a circular plastic cast extending from knuckles to axilla, with the elbow flexed at 90 degrees.

If the fracture is not reduced the fragments fail to unite, and the result usually is a weak, deformed elbow. Delayed ulnar nerve palsy may occur from 5 to 20 years later.[23] The deformity may be corrected by osteotomy with pin fixation and excision of the loose fragment; if symptoms of ulnar nerve palsy have appeared, the nerve may be transplanted to the front of the elbow at the time of the osteotomy.

Fracture of the medial epicondyle • This type of fracture usually results from a fall on the elbow and the back of the forearm, the force being transmitted to the internal epicondyle through the ulna. The entire epicondyle is broken off. If it is displaced no more than a few millimeters, brief immobilization and flexion will result in bony healing without deformity. With greater displacement, either the fragment must be left displaced or the joint must be opened and the fragment pinned in its normal position; closed reduction is impossible. If the displacement is allowed to remain, there is non-union with slight deformity but no disability. With marked displacement, there may be prolonged flexion deformity and permanent weakness of the elbow.

If the injury is diagnosed promptly and there is no contraindication to surgical treatment, condylar replacement is the best procedure. There are two urgent indications for such treatment: symptoms of ulnar nerve injury, and temporary dislocation of the elbow joint which leaves the bone fragment incarcerated in the joint. At the time of open reduction, if the fragment is small and damaged, or if the operation has been delayed for two weeks or more, then the bony fragment should be excised. In operating, extreme care must be taken to avoid injuring the ulnar nerve; however, if the nerve is involved in the fracture it should be transplanted to the front of the elbow. If the separated condyle is retained, it should be firmly fixed in its original position by means of Kirschner wires, nails, or screws. After the operation a plaster mold is applied with the forearm pronated and flexed at about 90 degrees. As always, frequent x-ray examinations are necessary.

If the operation is delayed for as long as 4 weeks,

the flexion deformity may remain for a long time or permanently. After 3 months without surgical treatment, the prognosis is better if conservative measures are adopted instead,[24] even if the fragment is imprisoned in the elbow joint.

Generally it may be said that fractures of either the lateral or medial epicondyle alone are uncommon, especially in children, but may result in serious loss of elbow function. In the first place, the fracture line communicates with the joint, and if immobilization is continued too long, adhesions may limit motion. In the second place, the fragment is usually displaced by the pull of the flexor muscles on the medial side or the extensors on the lateral side, and any change in axis of the separated fragment will interfere with the hinge motion of the elbow and greatly limit flexion and extension.

Fracture of the capitellum • In extremely rare cases of elbow injury, a piece of the articular surface of the capitellum is broken off and either displaced or set free in the joint cavity, where it may block extension or flexion. Such a fracture is usually caused by indirect force, but may also result from a direct crushing injury. Unless a fragment is large, or the fracture is associated with other injuries, the immediate symptoms are not severe. There is some pain and effusion into the joint, with limitation of motion that is characteristic in that it is free up to a point, then suddenly blocked. The diagnosis is made by x-ray. If the fragment is large enough it may be possible to replace it by direct pressure, with the forearm in the position of pronation, adduction, and slight flexion. The elbow is then immobilized in moderately acute flexion. Small, loose fragments that are free in the joint probably have no blood supply and are not likely to unite; such fragments should be removed by arthrotomy.

Fracture of proximal end of radius • Fractures of the head and neck of the radius are likely to occur as complications of severe fracture dislocations of the elbow, but may occur also as isolated injuries. A fracture of the head of the radius is usually the result of direct violence; a fracture of the neck, or one in which the head is split or fragmented, is more apt to result from indirect violence. The thrust that produces a compression fracture of the radial head in an adult causes a fracture of the radial neck in a young child. Since the position of the forearm at the time of injury affects the direction of the fracture, rotation views of the proximal end of the radius, as advocated by Jeffery,[25] are important in determining the best position of the forearm during digital pressure for correction of the deformity.

If the fracture is incomplete, reduction is unnecessary. With partial displacement and 20 to 60 degrees of angulation in the position of the radial head, the fracture may be reduced by manipulation. With greater angulation, however, closed reduction is rarely successful and prompt open reduction is indicated.

Radial head fractures are much more amenable to conservative treatment in children than in adults. In children it is usually possible to replace the intact but displaced radial head by open reduction, suturing the tissues around it so as to hold it in place while the wound is being closed and a plaster cast applied. The head of the radius should not be removed in such cases, because of the danger of gross deformity of the forearm and hand.[26] If a fracture of the radial head and neck involves dislocation of the ulnohumeral joint, with soft tissue injury leading to permanent limitation of motion, the head of the radius should be resected when the child is close to maturity.[27]

In the adult, if it seems likely that conservative treatment will give poor results, or has already been tried without success, surgical operation is advisable. A small separated fragment may be removed, the remainder of the radial head being left in place. If the head is comminuted or compacted on the neck with displacement, the entire head should be removed, with enough of the neck to insure free motion of the elbow joint. After the operation a posterior plaster mold is applied with the forearm flexed and supinated.

Congenital dislocation of the head of the radius with no other congenital abnormality is extremely rare. In distinguishing between congenital and traumatic dislocations, one of the most reliable signs is the condition of the capitellum; if this is grossly underdeveloped, the altered shape of the head of the radius may be considered a secondary congenital deformity.[27] Anterior congenital dislocations of the radial head are likely to be traumatic in origin, possibly the result of forced pronation of the ulna.

Subluxation or dislocation of the distal radial ulnar joint has been regarded as one of the rare complications following fracture of the head of the radius. During a review of 100 cases of fracture of the head of the radius, McDougall and White[28] found a number of patients who complained of weakness of the wrist, and closer study indicated that in 25 cases the sign was associated with displacement of the distal radial ulnar joint resulting from an upward shift in the radius. In all except 1, the displacement had occurred after removal of the head of the radius. The displacement may not be recognized until several years after the operation; the onset may be asymptomatic, or there may be pain and swelling. McDougall and White concluded that if an injury is severe enough to disrupt both radial ulnar joints and dislocate the head of the radius or crush it severely, the upward shift of the radius occurs at the time of injury. If the injury merely damages the radial head enough for it to be excised, subsequent displacement is due to gradual stretching of the articular disc and perhaps of the interosseous membrane.

Subluxation of the head of the radius is fairly common in children between the ages of 2 and 5. It is usually caused by forcible traction on the extended arm, as when the child is lifted by the arm. X-ray findings may be negative, but the child's complaint of pain in the arm, and his refusal to use it, are usually diagnostic. The treatment consists of reduction by manipulation, followed by fixation for a few days, adhesive dressing, and use of a Jones sling.

Fracture of the olecranon • Olecranon fractures rarely occur as isolated injuries in children; partite olecranon (patella cubiti)[29] is a developmental anomaly which has been erroneously described as a nonunited fracture in children. In adults, fracture of the olecranon is a rather common injury, most often the result of indirect violence. There is rarely comminution of the fracture unless it has resulted from a direct blow.

In olecranon fractures, the degree of displacement depends on the extent of the tear in the periosteum and the triceps muscle. If the periosteum is torn the upper fragment is forced upward by the fracturing force and drawn upward by the triceps muscle which is inserted into it. In new fractures the displacement is slight; if there is wide separation of the fragments it may be assumed that the fracture is an old one with extensive tearing of the periosteum, so that the unopposed triceps muscle has gradually contracted and drawn the separated fragments upward. There is usually relatively little damage to the soft tissues. In severe injuries the fracture may be accompanied by dislocation or fracture of the radial head, fracture of the lower end of the humerus, and anterior dislocation of the upper end of the radius. Loss of active extension of the elbow, with pain, tenderness, and swelling over the olecranon, is sufficient for diagnosis of fracture with separation, but confirmatory x-ray films should be made.

In fractures without separation of the fragment, the elbow is simply immobilized at 90 degrees in a light plaster cast from the axilla to the wrist, for a period of about 6 weeks. A comminuted, oblique, or transverse fracture with no displacement is usually treated in 90-degree flexion, but sometimes full extension may be necessary to prevent displacement. If displacement of more than ¼ inch occurs when the elbow is flexed to a right angle, the fracture should be treated by open reduction, which usually results in firm bony union and good function. Fixation is accomplished by stainless steel wire in cases involving comminution, or by a long screw. Following the operation a plaster cast is applied with the arm flexed to 90 degrees. Watson-Jones[23] advocates excision of the olecranon and repair of the triceps muscle as an alternative method of open repair, particularly where the olecranon fracture is high and the separated fragment is small, or in elderly individuals with badly comminuted fractures.

The prognosis in olecranon fractures with little or no separation is usually good in that there is no noticeable deformity and the elbow retains strength and function. In olecranon fractures with wide separation, the results depend on the success of surgical procedures.

Fracture of the coronoid process • Coronoid fractures are rather rare, occurring usually as a complication of posterior dislocation of the elbow. Since the tip of the coronoid is intra-articular, if it is broken off it may become a loose body within the joint following the reduction of a posterior dislocation. Displaced fragments of an oblique or transverse fracture of the coronoid process may also separate into the joint and lead to a bony block at the elbow. If there is only slight separation, the arm may simply be immobilized in a posterior plaster cast with as much flexion as elbow motion permits; in more serious fractures, reduction should be performed before the cast is applied. If there is bony block from a loose fragment which cannot be reduced, or if excessive callus or myositis ossificans results from the injury, the fragment or the excess bone should be removed after the condition has ceased to progress.

Fracture of the ulna and dislocation of the head of the radius • The upper third of the shaft of the ulna may be fractured by direct violence to the forearm just below the elbow, and because of the subcutaneous position of the bone such fractures are often compound. In severe fractures there may be complete separation of the fragments, and the upward displacement of the distal fragment may be accompanied by anterior dislocation of the head of the radius. This is known as the Monteggia fracture. In such injuries the orthopedic surgeon should first reduce the fracture of the ulna and then manipulate the head of the radius back into its normal position. If dislocation recurs, the head of the radius should be surgically fixed in position by repair of the angular ligament or if necessary by a fascia loop.

The anatomic structures in the forearm sometimes complicate the handling of the upper fragment of the ulna so that it may be necessary to carry out open reduction, with fixation by means of a plate, intramedullary nail, or heavy Kirschner wire. The forearm should then be immobilized with enough flexion to keep the radial head in position; the plaster mold is applied from the axilla to and including the wrist and base of the hand.

If a torn obicular ligament prevents the complete reduction of the radial head, the joint should be opened and the ligament repaired before the ulna is surgically fixed. This will insure firm fixation of the radial head, without which the open reduction of the ulna is extremely difficult.

Occasionally it is found that after the plaster cast is removed the head of the radius is ankylosed or becomes dislocated again. In ankylosis, surgical removal of the radial head is indicated; with redislocation, the radial head may be replaced or resected, as indicated.

Blount[2] states that a malunited and unreduced Monteggia fracture in a child 3 months old or older should be allowed to go untreated. Children exhibit remarkable adaptability to such conditions, and the presence of an unstable radial head is preferable to the disturbance in growth that would result from its removal.

Dislocation at the elbow • During adolescence, dislocations of the elbow are much more frequent than those of the shoulder, because of the immaturity of the coronoid and olecranon processes. Dislocation of the elbow joint without fracture is more common in children than adults. Of the many possible forms of dislocation, the most common is the posterior dislocation of both bones of the forearm upon the hu-

merus; second is lateral dislocation of the head of the radius. All other forms of dislocation at the elbow are associated with other injuries.

Dislocation always involves tearing of the ligaments and capsular structures of the elbow, and in addition there may be laceration of the brachialis anticus muscle. The ulnar nerve frequently is injured, and sometimes it is caught within the joint at the time of dislocation or after reduction has been accomplished. The radial nerve also may be injured, if there is anterior dislocation of the radial head. Tests of nerve function, careful examination of the pulse and circulation, and comparison of the injured with the normal side, should always be carried out before the dislocation is reduced, and the plan for treatment adjusted accordingly.

If treatment is possible immediately after the dislocation occurs, reduction is simple and easy. After a half-hour or more, general anesthesia is necessary. In all cases, x-ray examination is essential, to determine whether the bones are correctly positioned and also whether there are fractures in or around the elbow joint. After reduction, the arm is immobilized in a posterior plaster mold with the elbow flexed as much as is safe with respect to the degree of swelling. If there is undue stiffness in the elbow after the cast is removed, local heat and massage may be used, but the joint should not be manipulated, as this tends to encourage the development of myositis ossificans and adhesions. Usually the uncomplicated posterior dislocation which has been treated early has an excellent prognosis. Old unreduced dislocations present serious problems; Eliason[30] states that an elbow dislocation grows out early and usually cannot be reduced by closed methods after 10 days to 2 weeks. If there is x-ray evidence of myositis ossificans around the joint, surgical treatment must be delayed until the process of ossification has ceased; then arthroplasty may be performed. If there is no evidence of ossification, arthrotomy and open reduction may be carried out.

There have been few reports of persistent recurrent dislocations of the elbow since Alber[31] first described this abnormality. Some of the earliest reported cases have been reviewed by von Staplemohr.[32] The few cases reported in recent years[33-38] have been noteworthy chiefly for the great variety of causes assigned to the condition and of operations devised to correct it. The technics have included plastic surgery, bone grafting, and various kinds of supportive sutures, and treatment seems to have been successful in all cases.

Summary

It is usually possible to decide from the history of the injury and the extent of the disability whether there is a serious lesion at the elbow joint. A good deal can be learned about the extent and character of the damage from the site of the injury, degree of swelling, presence of deformity, and the way the injury occurred. Final diagnosis depends on palpation, manipulation, and x-ray examination. The first step in the physical examination of the patient is to identify the three cardinal bony landmarks at the elbow and evaluate any abnormality in their relationship with each other and with the shaft of the humerus. The injured elbow should always be carefully compared with the uninjured elbow, to determine the type and extent of distortion.

Fractures occur singly or in combination in any of the anatomic structures that constitute the elbow joint. Dislocations may appear alone or in association with fractures. The chief complications following injuries to the elbow include Volkmann's ischemic contracture, myositis ossificans, fibrosis of soft tissues, ankylosis of the joint, and paralysis resulting from nerve injury. Compound fractures carry the gravest risk of serious infection and shock.

Treatment depends on the type and location of the injury; the methods range from simple reduction to extensive surgical repair and reconstruction. The chief aim is to restore function to the highest degree possible.

386 North Second Ave.

1. Bancroft, F. W., and Marble, H. C., eds.: Surgical treatment of motor-skeletal system. Ed. 2. J. B. Lippincott Co., Philadelphia, 1951.
2. Blount, W. P.: Fractures in children. Williams & Wilkins Co., Baltimore, 1954.
3. McBride, E. D.: Disability evaluation. Ed. 4. J. B. Lippincott Co., Philadelphia, 1948.
4. Key, J. A., and Conwell, H. E.: Management of fractures, dislocations and sprains. Ed. 6. C. V. Mosby Co., St. Louis, 1956.
5. Childress, H. M.: Recurrent ulnar-nerve dislocation at elbow. J. Bone & Joint Surg. 38A:978-983, Oct. 1956.
6. McGowan, A. J.: Results of transposition of ulnar nerve for traumatic ulnar neuritis. J. Bone & Joint Surg. 32B:293-301, Aug. 1950.
7. Gay, J. R., and Love, J. G.: Diagnosis and treatment of tardy paralysis of ulnar nerve, based on study of 100 cases. J. Bone & Joint Surg. 29:1087-1097, Oct. 1947.
8. Baab, O.: Fractures involving elbow, in Textbook of orthopedics, by M. B. Howorth et al. W. B. Saunders Co., Philadelphia, 1952, pp. 568-574.
9. Borchgrevink, O.: Die ambulatorische Extensionsbehandlung der oberen Extremität. Verhandl. d. deutsch. Gesellsch. f. Chir., Berl. 37: 290-294, 1908.
10. Philippides, D.: Zur Reposition von Knochenbrüchen in einem Akt durch Züge. Chirurg 9:409-418, June 1, 1937.
11. Böhler, L.: Technik der Knochenbruchbehandlung. Ed. 6. Wilhelm Maudrich, Vienna, 1938.
12. Dunlop, J.: Transcondylar fractures of humerus in childhood. J. Bone & Joint Surg. 21:59-73, Jan. 1939.
13. Allen, P. D., and Gramse, A. E.: Transcondylar fractures of humerus treated by Dunlop traction; report of 21 cases. Am. J. Surg. 67:217-227, Feb. 1945.
14. Miller, E. M., et al.: Progress in management of severe supracondylar fractures of elbow. Ann. Surg. 113:1098-1100, 1941.
15. Maylahn, D. J., and Fahey, J. J.: Fractures of elbow in children. J. Am. M. A. 166:220-228, Jan. 18, 1958.
16. Holmberg, L.: Fractures in distal end of humerus in children. Acta chir. Scandinav. (supp. 103) 92:1-69, 1945.
17. Hoyer, A.: Treatment of supracondylar fracture of humerus by skeletal traction in abduction splint. J. Bone & Joint Surg. 34A:623-637, July 1952.
18. Madsen, E.: Supracondylar fractures of humerus in children. J. Bone & Joint Surg. 37B:241-245, May 1955.
19. Eliason, E. L.: Dressing for supracondylar fractures of humerus. J. Am. M. A. 82:1934-1935, June 14, 1924.
20. Carli, C.: Trazione col filo nelle fratture sovracondiloidee di gomito del bambino. Chir. d. org. di movimento 18:311-316, Sept. 1933
21. Lipscomb, P. R., and Burleson, R. J.: Vascular and neural complications in supracondylar fractures of humerus in children. J. Bone & Joint Surg. 37A:487-492, June 1955.
22. Seddon, H. J.: Nerve lesions complicating certain closed bone injuries. J. Am. M. A. 135:691-694, Nov. 15, 1947.
23. Watson-Jones, R.: Fractures and joint injuries. Ed. 4. Williams & Wilkins Co., Baltimore, 1952, vol. 1, 1955, vol. 2.
24. Patrick, J.: Fracture of medial epicondyle with displacement into elbow joint. J. Bone & Joint Surg. 28:143-147, Jan. 1946.
25. Jeffery, C. C.: Fractures of head of radius in children. J. Bone & Joint Surg. 32B:314-324, Aug. 1950.
26. Lewis, R. W., and Thibodeau, A. A.: Deformity of wrist following resection of radial head. Surg. Gynec. & Obst. 64:1079-1085, June 1937.
27. Caravias, D. E.: Some observations on congenital dislocation of head of radius. J. Bone & Joint Surg. 39B:86-90, Feb. 1957.
28. McDougall, A., and White, J.: Subluxation of inferior radioulnar joint complicating fracture of radial head. J. Bone & Joint Surg. 39B:278-287, May 1957.
29. Tseytlin, A. A.: Traumatic origin of accessory bones at elbow. J. Bone & Joint Surg. 17:933-938, Oct. 1935.

30. Eliason, E. L.: Fractures of humerus, radius and ulna. D. Appleton & Co., New York, 1925.
31. Alber, T. E.: Lehrbuch der Chirurgie und Operationslehre. Ed. 2. Urban & Schwarzenberg, Vienna, 1881, vol. 2, p. 377.
32. von Stapelmohr, S.: Über Luxatio habitualis cubiti posterior. Acta chir. Scandinav. 98:511-522, 1949.
33. Milch, H.: Bilateral recurrent dislocation of ulna at elbow. J. Bone & Joint Surg. 18:777-780, 1936.
34. Reichenheim, P. P.: Transplantation of biceps tendon as treatment for recurrent dislocation of elbow. Brit. J. Surg. 35:201, 1947.
35. Kapel, O.: Operation for habitual dislocation of elbow. J. Bone & Joint Surg. 33A:707-710, July 1951.
36. King, T.: Recurrent dislocation of elbow. J. Bone & Joint Surg. 35B:50-54, Feb. 1953.
37. Spring, W. E.: Report of case of recurrent dislocation of elbow. J. Bone & Joint Surg. 35B:55, Feb. 1953.
38. Hall, R. M.: Recurrent posterior dislocation of elbow joint in boy. J. Bone & Joint Surg. 35B:56, Feb. 1953.

Ashhurst, A. P. C.: Anatomical and surgical study of fractures of lower end of humerus. Lea & Febiger, Philadelphia, 1910.
Blount, W. P.: Editorial: Volkmann's ischemic contracture. Surg. Gynec. & Obst. 90:244-246, Feb. 1950.
Bowers, W. F.: Surgery of trauma. J. B. Lippincott Co., Philadelphia, 1953.
Boyd, H. B.: Surgical exposure of ulna and proximal third of radius through one incision. Surg. Gynec. & Obst. 71:86-88, July, 1940.
Campbell, W. C.: Operative orthopedics. C. V. Mosby Co., St. Louis, 1939.
Cozen, L., et al.: Operative orthopedic clinics. J. B. Lippincott Co., Philadelphia, 1955.
Cyriax, J. H.: Text-book of orthopaedic medicine. Paul B. Hoeber, New York, 1955, vol. 2.
Dunlop, J.: Traumatic separation of medial epicondyle of humerus in adolescence. J. Bone & Joint Surg. 17:577-587, 1935.
Ferguson, L. K.: Surgery of ambulatory patient. J. B. Lippincott Co., Philadelphia, 1942.
Geckeler, E. O.: Fractures and dislocations for practitioners. Ed. 3. Baltimore, Williams & Wilkins Co., 1943.
Hammond, G.: Symposium on orthopedic surgery and neurosurgery; management of supracondylar fractures of humerus in children. S. Clin. North America 32:747-762, June 1952.
MacAusland, W. R., Jr., Gartland, J. J., and Hallock, H.: Use of hyaluronidase in orthopaedic surgery. J. Bone & Joint Surg. 35A:604-608, July, 1953.
Magnuson, P. B., and Stack, J. K.: Fractures. Ed. 5. J. B. Lippincott Co., Philadelphia, 1949.
Malgaigne, J. F.: Treatise on fractures, translated by J. H. Packard. J. B. Lippincott Co., Philadelphia, 1859.
Potter, C. M. C.: Fracture-dislocation of trochlea. J. Bone & Joint Surg. 36B:250-253, May 1954.
Scudder, C. L.: Treatment of fractures. Ed. 11. W. B. Saunders Co., Philadelphia, 1938.
Steindler, A., and Marxer, J. L.: Traumatic deformities and disabilities of upper extremity. Charles C Thomas, Springfield, Ill., 1946.
Stimson, B. B.: Manual of fractures and dislocations. Ed. 2. Lea & Febiger, Philadelphia, 1947.
von Volkmann, R.: Die ischämischen Muskellahmungen und Kontrakturen. Zbl. f. Chir. 8:801-803, 1881.

Medical audit
A panel discussion*

Moderator, J. GORDON EPPERSON, D.O., F.A.C.O.S.,† Oakland, California. Panel members, CLARE DETHLEFS, R.N.,‡ Oakland, California; DONALD SIEHL, D.O., F.A.C.O.S.,§ Dayton, Ohio; MIGUEL M. ALVARADO, A.B., D.O.,‖ Dayton, Ohio; MILTON McKAY, J.D.,¶ Chicago, Illinois; GEORGE A. FULLER, JR.,# Kansas City, Missouri

DR. EPPERSON: The presentation this afternoon has to do with the medical record, a most important matter to all who are engaged in hospital practice. Gentlemen, you are here, I presume, because of your desire to gain some information, and it will be incumbent upon you to take this information back to your respective staffs; I believe that the basic problems connected with the medical audit can be solved only through an educational effort.

Allow me as Moderator to make some prefatory remarks pertaining to the subject. Probably a definition is in order. Simply stated, medical audit is self-evaluation, by the physician, of professional practice as reflected in the hospital medical records.

Your Program Committee has considered the need for bringing certain aspects of this over-all subject before our membership in the past: The topic, "Tumor Board and its Functions" was presented 2 years ago, and "Tissue Committee: Formation, Function and Relationship," was presented last year. These committees of the hospital staff, like all committees and by whatever name, have but one objective: to assay the level of patient care in their own hospital.

Having established basic requirements for professional and hospital standards, which should produce

*Presented at the Annual Clinical Assembly of the American College of Osteopathic Surgeons, Boston, Massachusetts, October 29, 1958.
†Dr. Epperson is a senior member of the Department of Surgery at the Civic Center Hospital, Oakland, California, and is a member of the Board of Governors of the American College of Osteopathic Surgeons.
‡Miss Dethlefs is Medical Record Librarian at Civic Center Hospital, Oakland, California.
§Dr. Siehl is President of the American Osteopathic Academy of Orthopedics, a past chairman of his staff at Grandview Hospital, Dayton, Ohio, and chairman of the Medical Record Committee at that hospital.
‖Dr. Alvarado is pathologist at Grandview Hospital, Dayton, Ohio.
¶Mr. McKay is general counsel for the American Osteopathic Association, Chicago.
#Mr. Fuller is a Fellow of the American College of Osteopathic Hospital Administrators, past trustee and officer of the American Osteopathic Hospital Association, a lay member of the Osteopathic Liaison Committee of the Kansas City area of Blue Cross and Blue Shield, and administrator of the Lakeside Hospital, Kansas City, Missouri.

a high level of patient care, the American Osteopathic Association, through the Bureau of Hospitals, has delegated the specialty colleges and certifying boards, through their membership and diplomates, to maintain this high level of patient care. The committees within the staff organization, which function on behalf of the staff, are broadly responsible for evaluating our professional practice. Only by such evaluation can the index of patient care be determined and therefore correctly justified.

Many of us have come to appreciate the value of the *full* medical audit within the hospital, not only in the surgical field, but also in internal medicine, obstetrics, general practice, and so forth. We have recognized its benefits in the evaluation and justification of surgery, medical management of disease, or conduct of obstetric practice. We have seen standards of practice being raised and maintained.

In this era of purchasable health insurance, covering hospitalization and physicians' and surgeons' fees for services rendered, the medical audit has taken on a new emphasis. We find more and more scrutiny of hospital charges and fees for services rendered by the agency paying the bill in whole or in part. This third party, on behalf of the public whose health insurance may be purchased privately or through union or welfare plans, is involved in up to 75 per cent of hospital admissions in many areas; this percentage is probably higher in some places and will no doubt go higher in general. Hospitals and their staffs in such areas are dependent on this form of hospital admission for a very high percentage of their income. The physician and surgeon finds himself in the same position.

We can readily see that the matter of hospital charges and professional fees for services is of primary concern to any third-party agency which has the problem of adjusting premium payments to meet such costs. A great deal of pressure is being exerted to find the solution to the dilemma of rising cost of full or partial hospitalization and for the payment of professional services. In fact, the third party agency asks, through financial audit, "What did our dollars, in behalf of the public, purchase in hospital services?" Through medical audit is asked the question, "What did our dollars purchase in medical, surgical, or obstetric services as provided by the physician and surgeon?"

There is also an internal corollary between the financial audit of hospital service and the medical audit of professional service of the hospital staff. The board of trustees of any hospital expects to provide the best facilities for the care of its patients, and it delegates responsibility for their care to a competent staff. Working within the framework of the requirements for approval established by the Bureau of Hospitals, the medical staff of any approved hospital has an obligation to translate through medical audit of its own practice the validity and justification for the expenditure of available funds. The physician and the physician alone can so document the medical record as to justify not only the patient's care but the costs related thereto. We believe you will recognize, as we proceed, the implication of responsibility of the medical profession in the solution of this problem.

The panel will now present the various facets of the medical audit. We would ask that you assume the feeling that you are hearing presented the problems of a given hospital staff, and that I am serving, as it were, as Chief of Staff. We have here various individuals who represent the thinking and background of an organized staff. Each panelist will present an individual phase in order to establish continuity in the subject material.

Following their presentations, we will return to each speaker, and allow questions to be directed by other panelists and from the floor.

We will begin with the fundamental document, the medical record. The subject of our first panelist is the "Quantitative"—not Qualitative—"Quantitative and statistical analysis of the medical record in relation to the medical audit."

Quantitative analysis

Miss Dethlefs: Members of the American College of Osteopathic Surgeons: With the cooperation of the various staff committees, the medical audit has created an active interest in good charting and a scientific atmosphere in the medical record department. This department, through the services of the librarian and her staff, bears a great responsibility in the preparation, processing, and preservation of the medical record. Our panel believes that a review of the duties and responsibilities of that department should be presented even though it may be considered elementary.

The preliminary step in this undertaking consists of processing the medical record on a quantitative and statistical basis, which begins soon after the patient is dismissed from the hospital and the chart is received in the record room. Each chart is carefully studied for accuracy of information and detail of facts and reports. The chart consists of many different parts, with which I am sure you are familiar, each belonging to its own category according to the doctor's findings and statements. All vital parts—history, physical examination, progress notes, doctor's orders, and so on—are represented. X-ray and laboratory reports, if delayed, present a problem and may have to be traced after the patient leaves the hospital. In fact, a check is made for all reports which are indicated by the nature of the case. Consultations are of two types: those outlined in *Minimum Requirements*[3] and in hospital bylaws, and those especially requested by the physician, who as a moral and ethical obligation seeks another professional opinion before making a decision in a difficult or puzzling case. If it is a surgical chart, the preanesthetic survey sheet, anesthetic record, and operative record are all placed in order, as is the pathologist's report, which is anticipated and filed with the chart as soon as received. Duplicate copies of birth and death certificates become a part of the hospital record. The autopsy report is filed with the chart.

For easy reference to the physician, a check sheet

Many of us have come to appreciate the value of the full medical audit in the evaluation and justification of surgery, medical management of disease, or conduct of obstetric practice. We have seen standards of practice being raised and maintained

is prepared by record room personnel. Incomplete items or omissions on the record are noted on this sheet, and, after the initial processing, the check sheet is placed with the chart in the doctor's individual file for completion.

Every record is inspected for appropriate authorizations. The usual blanket form is no longer acceptable for surgery, and a specific consent form is essential for each operation. We check for all required signatures of the physician. Even items which may be considered minor, such as missing countersignatures on verbal orders to interns or nurses, are noted as deficiencies on the check sheet.

Many charts are at once ready for final filing. Often, however, the physician will delay until all reports are in before his final evaluation of the record and completion of the diagnosis and remainder of the clinical summary sheet. These temporary insufficiencies are also noted on the check sheet. Incomplete charts are accepted as our heritage, and have to be dealt with in some manner. The staff may impose certain time limits for the completion of these records, with possible penalties, and this usually is effective.

Statistical reports[1] are part of the auditing system. As the chart is being processed, statistical data is posted from each record on a Daily Analysis Sheet. All pertinent data are entered in columns which can be tallied easily. Each case is recorded under a service—medicine, surgery, obstetrics, and so on—depending on the nature of the case as portrayed by the final diagnosis. In each case, the hospital days of care, consultations, deaths, operations, religion, and race can also be listed. At the end of each month the columns are tallied and a report prepared which gives an over-all picture of the medical care given in the hospital. The following may be included:

1. Total patients treated in the hospital, by service
2. Total births and deaths
3. Average bed occupancy, length of stay, and average daily census
4. Ratio of consultations, cesarean sections, deaths, and autopsies
5. Major and minory surgery.

This material can be compiled, in five columns, on a comparative and accumulative basis. The current month can be compared with the previous month or the same month of the previous year, and a total of all the months of the year to date with that of the previous year to date. These are all factors to be considered in a well-functioning hospital.

Reports are prepared for the chief of staff, executive committee, or department heads, who will refer to this material at staff and committee meetings. These month-end reports are also used by the administrator in correlation with his financial reports, or financial audit, as it were, in the economic operation of the hospital.

The disease and operation index is also a part of the statistical analysis. It provides material for research and clinicopathologic conferences. These indexes are set up in such a manner that cases can be selected at a moment's notice. Standard nomenclature[2] is adaptable to easy classification. The physician's index provides a record of the work of each individual physician; this information is available to the medical audit committee and the credentials committee. These indexes can be of particular value to the surgical staff, either members or candidates for membership in the College of Surgeons, by providing reference material for compiling case reports, summaries, and statistics on variety and volume of cases. This is valuable, for example, in registered preceptorship and resident training programs.

Briefly stated, this completes the quantitative and statistical evaluation of the medical record. Once a chart is complete, it is a closed book for the time being. When a patient is readmitted to the hospital, or for reasons unknown to us, the chart will be made available upon request of authority.

Whenever the tissue committee or medical record committee is ready to review, the charts are available and can be grouped according to their request. The qualitative analysis is the doctor's function, and although the medical record librarian stands ready to assist in any way, I personally feel that she should be excluded from active participation in these conferences. However, the medical record librarian or a member of her staff can act as secretary and transcribe the medical minutes and reports of any or all meetings of the reviewing committees. She is already familiar with any deficiencies in the medical records, and because of the confidential nature of her regular work will observe the time-honored ethical professional relationship in this matter as well. All records of this nature are kept under strict supervision and in a locked file. Check or work sheets are never filed with the patient's chart.

Of great concern to all approved osteopathic training hospitals is the annual visit by a representative of the Bureau of Hospitals. This need not be dreaded if all hospitals adopt the philosophy of the medical audit. The hospital inspector is an authority and consultant who comes in good faith for the benefit of the hospital. He is welcome in our department, and his praise or criticism is a gain to our profession. From having visited many hospitals he is in a position to determine if our rating is equal to that of other institutions. His survey, performed in a systematic manner, represents a form of medical audit,

and the quantitative and qualitative contents of the chart are important factors from which he forms an opinion on the work of the staff, and on which he bases his report to the Bureau of Hospitals.

The medical record librarian will continue in her role of service to the physician and compile his statistics. Medical audit has placed a newer emphasis on the medical record, since it goes beyond the quantitative and statistical analysis stage. The physician has now assumed the role which only he can fill. The medical record now reflects the physician-evaluation of each record, and portrays his concern for the quality of patient care given in our hospitals.

DR. EPPERSON: Thank, you, Miss Dethlefs. Now I would like to call on the next panelist, whose subject covers the "Qualitative evaluation of the medical practice of the staff, and such functions as the tissue committee, tumor board, and mortality review committee." Dr. Siehl is chairman of the medical record committee in his hospital.

Qualitative analysis

DR. SIEHL: I want to emphasize that we do not present the last word in regard to the medical audit. In our own area we have been casting about for a method to handle this matter, as much as has anyone else. We have come up with a few ideas and discarded them, and then tried some others. However, I think I can give you some idea of some of the thinking that is current in our own hospital and in some other hospitals around the country.

Not too many years ago, the medical record committee checked charts purely from the quantitative aspect—that is, just to see that the chart was complete and all necessary information was there. However, in recent years it has become more the duty of the medical record committee to conduct a qualitative review of the charts to see if they measure up to medical standards, and, from the charts, to evaluate the medical care of a particular patient.

Thus, today, this group might be termed more adequately a medical audit committee. As a matter of fact, in some hospitals this committee has been combined with the tissue committee, the tumor committee, and the mortality review committee into one large combined committee, since their fundamental purpose is the same except in slightly differing fields. All are evaluating the quality of the medical care as evidenced by hospital records. Such a proposal is to be made shortly in our own hospital; those of us making the proposal feel that it will facilitate the work of the committee (or these various subcommittees), and that it should avoid some duplication of effort, as there has been in the past.

As a general rule the medical record committee has been appointed by the chief of staff. It is authorized to have subcommittees depending on the particular hospital organization. The chief of staff should give considerable thought to whom he puts on a medical record committee. It should be staff members who are qualified and who are capable of analyzing the work of their colleagues in an impartial manner.

This does not mean that every member of the medical record committee has to be a qualified specialist. There are many general practitioners who can function very efficiently on a medical record commitee, but the man has to be able to make an evaluation, try to keep it unbiased, and try to keep personalities out of the matter. We cannot conduct an adequate medical audit unless it is done on an impartial basis.

Each major department should be represented. If the committee includes subcommittees such as I mentioned before, those subcommittees should have representation from the major departments.

The subcommittee or separate committee on mortality review evaluates the patient's medical care during his stay in the hospital, and considers whether or not the death was preventable. If the death was preventable, was it the fault of the patient, the hospital, the doctor, or someone else?

There has been much unfavorable publicity in the lay press concerning unnecessary surgery and normal tissue removed at surgery. We know that there may or may not be a close relationship between pathology and tissue reports. The tissue committee is actually an important committee when functioning well; it will definitely improve the type of operations performed in the hospital and can be very effective in any medical staff regardless of the size.

A tumor committee is not necessarily as important as the tissue committee although its members do evaluate cases of tumors. They recommend and later can evaluate management. As was brought out in a panel here several years ago, one of the functions of the tumor committee is education of the staff along lines of diagnosis and management of problems arising in tumor cases.

Much is to be gained by statistical analysis. By taking merely the statistics provided by the medical record librarian and comparing them with accepted norms, you can see how your own hospital rates. (For a number of the items included in statistical reviews, there are accepted norms to be found in various books and publications that are available.) The tissue committee should go over these figures and report to the staff periodically.

The committee, in part or in whole, should review charts in order to evaluate them for quality of medical care. It is practically impossible for the committee to review and evaluate all charts from all aspects of medical care. At first this was the intention, and it may still be what we desire. However, as a compromise, the committee may want to select one month to review obstetric charts, perhaps only from one particular aspect. In another month they may want to review medical charts, or they may just take cardiac cases and review the diagnostic procedures and the management in a series of these, and then report back to the staff.

Any of these chart reviews take considerable time. It must be considered that this time is given voluntarily by the staff members and there is a limit to how much can be spent.

On the section of the committee concerned with tissue review (or on a separate committee on this

subject) there should be a general surgeon, probably an internist, a roentgenologist, and additional members representing other departments. Some hospitals will prefer to have the pathologist as an actual member of the committee, and others will prefer to have him as a consultant; but he certainly should be in on its function. That particular item will be discussed in more detail by Dr. Alvarado.

The object of this particular segment of the medical audit is to establish the justification for surgery by a complete analysis of the patient's medical record. In addition, these committee members have the prerogative to review certain nonsurgical cases if they present a problem which might be surgical in its management.

In order to function properly they will probably have to adopt some type of a work sheet so that they can record their findings on the particular chart. The work sheet will be a guide for the function of the committee and will provide a method for analyzing findings and preparing a report on them.

They will have to decide exactly what data should be recorded on these forms, and to what extent.

Generally, during the course of the audit the charts are identified by case number only, or, even better, merely by code number. The particular surgeon involved is also identified by a code number so that in later reports of the tissue committee there is no specific identification of a particular doctor or a particular hospital chart. This keeps the audit on a more unbiased basis and I believe, as Mr. McKay no doubt will bring out, there are certain medicolegal aspects involved also.

The *Minimum Requirements* of the Bureau of Hospitals states that the tissue committee should review the pathologist's reports on all tissue removed at surgery and make a report on these tissues, or on those tissues with either minimal or no pathologic change. They are also to review the pathology reports to see whether or not they agree with the final diagnosis, and so on. This process alone does not establish justification for surgery. The committee should review the clinical aspects of a particular case as well. In other words, they must review the entire chart to properly evaluate a particular patient's care.

They may attempt, say for a period of 2 or 3 months, to review all appendectomies and report on those; and then for a period of several months they may review all hysterectomies and report on whether or not these operations were justified. This is all done on the basis of the evidence on the chart; there is nothing else upon which to go. This is a matter that has to be emphasized over and over again to the doctors on the medical staff—surgeons and other specialists, and general practitioners alike. They must have the information on the chart; otherwise there is no way to evaluate a patient's care.

The medical record librarian has generally gone over these charts first to see that they are complete as far as mechanical aspects are concerned. Even so, certain things must be kept in mind. The medical record librarian may not know or may not note that certain laboratory and x-ray reports should be on the chart in a particular type of case. There it becomes a duty of the record committee to see that those deficiencies are corrected. For instance, not all charts require x-ray reports, but if there is a surgical problem, in which a diagnostic investigation prior to surgery indicates that some gastrointestinal x-rays should be done, that report should be on the chart. If it is a fracture case, for instance, the x-ray report should be on the chart.

Medical audit has placed a newer emphasis on the medical record, since it goes beyond the quantitative and statistical analysis stage. The medical record now reflects the physician-evaluation of each record, and portrays his concern for the quality of patient care given in our hospitals

Then the chart should be checked to determine whether the history is adequate and whether or not the preoperative or admitting diagnosis is substantiated by the patient's complaint; that is, is it borne out that the patient was admitted for what the doctor said was the admitting diagnosis?

There are many other aspects that can be checked, some of them to comply with certain regulations of the Bureau of Hospitals and others just to see if the chart is medically complete. The surgeon should have stated somewhere on the chart his preoperative diagnosis and the operation he contemplated before taking the patient to the operating room.

The committee should check to see that operative record itself is complete and that the procedure is reported correctly. Many times the medical record librarian is not able to check this; it requires an evaluation at the specialist's level.

Any complications should be recorded properly, both in the progress notes and on a summary or a face sheet. Then the committee should determine whether or not the progress notes tell the whole story. Do they give the opinion of the surgeon, the immediate postoperative condition of the patient, various aspects of care during his convalescence, and his general condition on discharge?

Then, the committee should determine whether there is an adequate summary of the case, either as a separate sheet or as a final progress note, giving a brief summary of the patient's hospital stay, his condition on his discharge, and what is the general prognosis.

The committee must rapidly go back and review what they have found on the chart and determine whether there is correlation between the clinical

findings and the operation that was performed, and between the pathologic diagnosis and what the doctors put down as the final diagnosis. They do not all have to agree 100 per cent, but there must be some degree of compatibility between these various items.

In a like manner, the mortality review section of the medical audit committee goes through the various mortality cases. In a similar manner either the whole medical audit committee or a subdivision of it will go over medical charts and obstetric charts, chiefly determining whether or not the admitting diagnosis, the final diagnosis, and the treatment given the patient are justified in the medical record.

This committee also has the prerogative to examine charts on the floor, that is, active charts in the hospital. Often the best way to make corrections is to catch things at the time they are happening or shortly thereafter; some things cannot be corrected after the chart is sent to the record room. Periodically, members of the committee should review charts on the floor. If they find deficiencies, these should be reported to the heads of the departments involved, and later a check should be carried out to see that the deficiencies are corrected.

In this connection, it is recommended that all doctors be encouraged to complete their charts at the time of the patient's discharge. Naturally there will be a case from time to time in which the doctor does not know the final diagnosis at time of discharge; he is waiting for a final laboratory or x-ray report, or for some other reason he may not be able to complete the records. However, in probably 90 to 95 per cent of cases the chart could be complete the day the patient leaves the hospital. This would avoid much of the difficulty later on, in the record room, of getting charts up to date.

There are other items that the medical audit committee should keep in mind in going over these charts. There are certain things that perhaps the executive committee and the staff should keep in mind as to the aims and the functions of the medical audit committee; that is, what are they trying to do?

There are certain questions that could be posed which would furnish a synopsis or an analysis of some of the functions of this committee, provided it functions ideally. That is the thing that we all strive for, but probably seldom reach. Some of these questions can be answered by an adequate medical audit: Are the deaths reported preventable or not preventable? Is there an excessive number of preventable deaths? Are some of the physicans filling the hospitals with patients just to collect the insurance fee? Are some patients being kept unnecessarily long? Are some physicians ordering all sorts of unneeded drugs and laboratory or x-ray work? Are normal appendices being removed, and if so are they too high a percentage? How much coincidental surgery is being done which prolongs surgical procedures unduly? How many patients go home too soon? And of those that do go home too soon, how many are readmitted for the same or a similar complaint because of inadequate therapy? Is the necessity for hospital admission established on the chart in each case? Are all parts of the chart complete? And are they filled out promptly? Is there a good correlation between pathologic diagnosis and the final diagnosis on the chart? Is the final diagnosis substantiated? Is the treatment that was rendered to the patient indicated on the basis of information on the chart? Has adequate use been made of laboratory and x-ray examinations? Are complications occurring too frequently? Is consultation called when needed or indicated? And when it is called, is it properly carried out? Are accepted procedures used in medical and surgical therapy?

Does the hospital supply medication as ordered? Does the nursing service carry out orders as written? Does the intern and resident staff give special medications as ordered? Do they give osteopathic manipulative treatment as ordered? Is manipulative treatment ordered on the indicated cases? How many patients refuse therapy? When complications arise are they the fault of the physician or of the hospital? Does the physician exceed his privileges or abilities?

The answer to these questions and much additional information can be obtained by adequate functioning of a medical audit committee over a certain period. They cannot all be answered immediately.

In summary, I would like to read a quotation on the benefits of the medical audit as prepared by the medical staff of Grant Hospital, in Chicago: "The Benefits to the Patient: Critical evaluation of the results benefits future patients. Incompetent and unethical practices are eliminated. The Benefits to the Medical Staff: Serves as a stimulus to the practice of scientific medicine. Privileges are based on performance and merit. Staff practices are controlled on a fair and impartial basis. There is an improvement of public relations. The Medical Audit is probably the best argument against any system of external control. The Benefits to the Hospital: The Administration and the Board of Directors are assured of high standards of professional practice. Deficiencies in administrative procedures and equipment are found and corrected. There are better medical records, and these accelerate certain administrative procedures and improve the teaching program. The Audit elevates points scorings on inspection ratings. It enhances public confidence in the institution."

DR. EPPERSON: You have heard from the chairman of a medical record committee, and his contribution to the qualitative evaluation of the medical practice of the staff.

Participating in most of the committees directly or indirectly, as mentioned by Dr. Siehl, is the pathologist. His work has become a key part of the medical audit. In connection with the tissue committee his role is indispensable. Dr. Alvarado, a pathologist, will present the subject, "The relationship of the pathologist to the tissue committee, tumor board and mortality review committee."

Pathologist's role

DR. ALVARADO: The role of the pathologist in these various committees can be a very satisfying and

rewarding one if his position is adequately understood by the members of the hospital staff. Essentially he helps to channel constructively the efforts of the rest of the staff in their committee work. This role is twofold: First, he gathers factual information in the course of his examination of pathologic specimens submitted to him. Second, he cooperates with the members of the various committees in the analysis of these facts.

As Dr. Siehl stated, his active participation in some of these committees varies in different hospitals. I shall describe primarily his activities in the tissue committee.

In our institution the pathologist is chairman of the tissue committee. My role is that of consultant; I am a nonvoting member of the committee, keeping more or less in the background although channeling the discussion along lines suggested by the pathologic findings.

The cases to be reviewed are selected by the pathologist, who is guided, in part, by lack of correspondence between the preoperative diagnosis as stated in the card accompanying the specimen to the laboratory and the final pathologic diagnosis. The tissues are classified as exhibiting major pathology, minor pathology, or as normal. Those cases falling in the last two categories are referred to the committee for review. Objectivity is aided by maintaining anonymity as much as possible; to this end, each surgeon is assigned a code number.

To be effective as an evaluating body, the members of the committee must give due regard to a number of points. Foremost, I think, is the clinical justification for the operation performed. This should be based on the facts noted on the chart. This is an important consideration since the pathologist cannot completely evaluate the necessity for operation only from gross and microscopic examination of the specimens received. The justification or lack of justification for surgery, then, must be left for other members of the committee to determine after they have evaluated all the factors involved.

A second point regarding effective evaluation is the maintenance of integrity and objectivity by the members of the committee. One must set aside—in view of the objectives to be gained—the natural reluctance to criticize the work of one's colleagues and render an opinion in a just, impartial way.

Sometimes an attempt is made to coerce the pathologist into making diagnoses that are not factual. There are also times when surgeons are reluctant to accept the diagnosis of normal tissue. But if all this work is to bear fruit the pathologist must make honest diagnoses.

The scope of the committee should be on a realistic basis. Dr. Siehl brought up this point and I would like to emphasize it. Since in most hospitals there are only a few individuals available to do this work some thought should be given to the manner in which it is to be done. Ideally, all charts should be reviewed, but perhaps in some institutions it would be more practical to evaluate cases by group, as for example all appendectomies performed during a certain period, or all hysterectomies. Charts may be reviewed in their entirety by all committee members at meeting time, or a number of charts may be assigned to each member who will then present salient facts for review by the entire committee.

The findings of the committee should be adequately recorded, perhaps in tabular form. The manner of recording and the things recorded should lend themselves to future statistical analysis so that the findings will be of greatest benefit to the staff in general.

The greatest deficiencies that I have noticed in examining charts, which greatly interfere with the proper analysis of the case, are poor histories and poor documentation of the case. There is often inadequate consultation or improper recording of findings. Generally, there is poor recording by the surgeon of his gross findings at operation. These are deficiencies that must be corrected.

As far as the tumor board is concerned, the pathologist should play an active role. He is actually a consultant in this case; his recommendations can be of importance and should carry some weight in the management of the case.

In my institution, I play no part in the mortality review committee. My function in this regard is primarily the performance of autopsies and preparation of the autopsy protocol. In many institutions the pathologist assumes a more active role and is on hand to give pertinent information and render opinions regarding the cases being reviewed.

We have a special neonatal mortality committee in which I am an active participant. I can not praise highly enough the important contributions that can be made by this committee in salvaging infants. The committee should include, in addition to the pathologist, a member from the obstetric department, a pediatrician, and a member each from the departments of anesthesia and general practice. In our institution we are actively functioning and although it is too early to report on our work, I believe that we shall be gratified with the result.

DR. EPPERSON: Thank you, Dr. Alvarado. You have supplemented considerably our conception of the pathologist's role in the functioning of the various committees within the organization of the staff.

Implied in the medical record is always the medicolegal responsibility of the physician to his patient as well as the medicolegal responsibility of the hospital to the patient. We will have reviewed for us "The medicolegal aspects of the medical audit as it pertains to the tissue committee and tumor committee, or to other functions of the staff in the relationship to the medical record," by Mr. Milton McKay.

Medicolegal considerations

MR. MCKAY: Thank you, Dr. Epperson and members of the American College of Osteopathic Surgeons.

As has already been stated, the basic purpose of the medical audit is to improve the quality of patient care; in doing so it is just one of the methods used in achieving this objective.

Legally it has been recognized that maintaining high standards of medical care depends upon the

character of the medical staff and the effectiveness of its organization in carrying out the following duties: One, the selection of those recommended for staff appointments and hospital privileges; two, constant analysis and review of work done in the hospital; three, support of medical staff in hospital policies; four, maintenance of adequate medical records; five, procurement of autopsies; and six, holding of necessary consultations.

Now, these are the general objectives and requirements which the medical staff should attempt to achieve, and audits are one of the methods that a staff uses in attempting to achieve these objectives. The medical audit can apply to almost all six of these objectives. There are also specific legal purposes which lawyers or those interested in law recognize as beneficial from the activities and the administration of the medical audit, tissue, tumor, mortality, and related committees. One is that such committees reduce the incidence of malpractice cases and other related suits because the audits are preventive in character. They bring about a higher level of care, and greater detail and attention, and thus have the direct result of reduced litigation and also reduced costs in relation to litigation. Second, there is also made available the necessary evidence to establish that the hospital is administered in accordance with the required legal standards of due care because of the standards maintained and established through the activities of the committee itself.

And third, and probably as important, the committee permits the accumulation of statistics and evidence that establish conformance with due care, in the administration of the hospital and in the providing of the medical care, and it presents the evidence which is necessary today in legislative proceedings, at meetings with medical plans of all types—from the United Mine Workers to insurance companies and to other third party plans—that osteopathic hospitals are meeting the general standards of patient care required of all hospitals throughout the country.

Basically the function could be said insofar as the law is concerned to relate to proof that the hospitals are meeting the legal responsibility of due care and that this responsibility is established, regulated, and controlled through this supervisory method which is recognized throughout the country as one of the most effective means of establishing due care.

It is also probably pertinent to recognize that many of the arguments against committees of this type or the establishment of the records or statistics which come from the committees are the same arguments that 20 or 25 years ago were used against the expansion of hospital records and the accumulation and preparation and compiling of the records which today are considered so basic to the operation of a good hospital.

In any change in procedure or development of new procedures there may be some risk involved, but the improvements accomplished in the elimination of other dangers, the decreased incidence of malpractice suits whether there is liability or not, and the upgrading of the quality of the services reduces comparable risks that may exist in hospitals not utilizing this procedure today. That factor is frequently not recognized.

The function could be said insofar as the law is concerned to relate to proof that hospitals are meeting the legal responsibility of due care and that this responsibility is established, regulated, and controlled through this supervisory method which is recognized throughout the country as one of the most effective means of establishing due care

One important legal aspect is that the status and legal responsibility of the committee in the hospital should be clearly established in the hospital bylaws and be evidenced in such a way that members of the staff are completely cognizant of the responsibility of the committee, and the actual duty of the committee to go through and carry out its functions. The committee should not have to be concerned over questions concerning its status, its jurisdiction, or its right to make the type of report that only can bring about the benefits which result from these committees.

Furthermore, it is well for the committees themselves to note that the over-all objective of the committee is to improve the quality of care and educate the doctors over an extended period; and that by and large any one case is not of over-riding importance, but rather it is the quality of care over a certain period that is important. Emphasis in the records and the reports should not necessarily concentrate on any one case but should relate to over-all commentaries that bring about over-all adjustments and correction of statistics of a bad rate in a certain area.

This is partly true also because in all cases the matter of individual judgment and personal evaluation by the individual physician who is involved in any one case is difficult to evaluate. A physician should not be actually tied down to an evaluation in one case but rather it should be determined whether, over a long period, he exercised the necessary judgment and met the criteria of evaluation that good practice requires.

It is axiomatic that good patient records are essential to the function of the committee, and that such patient records must be complete and that they must be signed wherever required. Particularly in cases where others made preliminary examinations (whether an intern, a house officer, or a resident) the physician who is the patient's own doctor must examine those preliminary reports or records and

actually read them to determine that they state what he believes to be true, so that when he countersigns those records he is sure that they constitute his own affirmative judgment. Frequently in cases it has come out that the physician only at the time of a suit determines that the intern, the resident, or the house officer did not actually keep records in the manner that he had thought they had. In such cases, almost without exception, the statement that is then in the written record will be the controlling record before the court. Irrespective of what he may have thought the records contained or how much he relied on the judgment of the other party, the ultimate responsibility for what he signed will remain with that individual doctor. Therefore, there cannot be too much emphasis in the activities of these committees upon seeing to it that the records do meet the standard required throughout the country for the maintenance of hospital records.

In practically all of the literature related to these committees, it is pointed out that where possible the purposes of the committees are facilitated if there is no identification of the name of the doctor or the patient, or other type of identifiable material that might be used in the event of a lawsuit. In many areas committees use code numbers or IBM systems.

It is to be recognized that the committees are not concerned with negligence. Negligence is a legal matter governed by legal principles, and the very term "negligence" is apart and separate from the medical and scientific purposes and functions of these committees. The committee members should recognize this fact and develop capacities for reporting these cases in a medical manner that will avoid any possibility of the committee taking a position in regard to negligence.

Thus the term "medically justified" does not have the same meaning as legally justified, or due care, and it can even be said to depend upon the quality of care that is acceptable in a particular institution. What is medically justified in Detroit, Michigan, probably might not be justified in another area where the same personnel or facilities are not present.

Medical audit committees should divorce themselves from any of the so-called legal terminologies and should resort to the accepted scientific approaches to these matters.

The report should be kept apart from the patient records maintained by the hospitals, doctors, and those taking care of the patients. These reports should be a part of the medical audit committee's own file and not the general files so that a subpoena for a patient's record could not in any way bring about an inclusion in the subpoenaed material of any medical audit committee report relating to the patient's case. This matter is of basic importance—that there should be no intermingling of the records.

When reviewing or analyzing hospital records these committees should not alter, deface, or make entries on the original records themselves. In several cases I have noticed where entries on the records have been made by persons in the hospital who examined records. In one case the fact that the record had been photostated was evidenced from a notation on the record. This would indicate to some third party who may have some other interest in the record that there had been particular attention given to these particular records. Once that entry had been made on the record it was not possible to eradicate it without setting aside the validity of the whole record. So the entry made by another person had to be left on the record. The record should be left, unaltered and without any written change upon the original. This principle applies not only to these committees but to anybody else in a hospital who takes upon himself the examination of the records.

Now, as far as the admissibility of these medical audit, tumor, tissue, or other committee reports is concerned, it is our position that such records are hearsay evidence insofar as their legal status is concerned. There is no question of their great medical and scientific value in the development of hospital standards, but insofar as admissibility in law is concerned they are hearsay and should not be—and as far as I know thus far have never yet been—made admissible in any court record. "Hearsay" is defined as an extrajudicial statement offered to prove the truth of what is asserted in the statement. The tests for ascertaining the truth or falsity of a statement are cross-examination, oath, and observation of the demeanor of the witness by the court or jury..

The function of the medical audit committee is completely different from the function or purpose involved in the original preparation of the records. The chart is an actual documentary record of care given to a patient and thus constitutes the original entries of the hospital business itself. Thus, hospital records of the patient are in many jurisdictions made admissible because either they are under the common law rule of the Shopbook Rule or the Statutory Uniform Business Records as Evidence Act whereby ordinary and usual records made in the ordinary course of business are made admissible.

But these medical audit records are not of that type. They are not made by the doctor who gave the care in the case. They are not actually a part of the patient's routine, in the same sense as the hospital records. They are not the usual records prepared for example in many states in compliance with the statutory requirement in regard to records, but are of a completely different category made by persons not in the physician-patient relationship and for a purpose related to the quality of care, and the education and training of staff members.

Thus, we do not believe that in any case, at any hospital, that the hospital should permit the documents to be turned over to any other party. In the case of a subpoena the lawyer for the hospital should refuse to comply with the subpoena in the sense of turning over the record, and contend that they are inadmissible in any event in a lawsuit. The audit records in any event need not be kept beyond their instant need, and should not be kept for long periods as are the regular hospital records. They can be destroyed when they have served their immediate purpose.

Thus, it should be contended in any pre-trial dis-

covery or the taking of a deposition that the records are hearsay. It is a basic principle of law that evidence or documentary matter that is inadmissible at the trial itself is not a subject matter for discovery or deposition; that if it would be inadmissible in court then it is not a subject matter for discovery or investigation by deposition. That is the basic principle upon which the legal status of these documents should be approached. However, it is well to recognize that this in no way alters their value as medical and scientific documents.

It might be said that probably the only place that we might contend that they could be usable would be where the question of the reasonableness of the denial of staff privileges to a doctor might be raised. A doctor might contend that he had unreasonably been denied the renewal of his hospital privileges and in that such case the hospital might want to use the reports as evidence of the reasonableness of the denial—but not in any way related to care in any one particular case. The hospital board of trustees in situations where the exercise of reasonableness may be involved could rely upon the over-all use of such a report as a basis for upholding a decision denying a doctor staff privileges.

I might point out that there are exceptions to the hearsay rule but that the exceptions should not provide any basis for admission. The only one that I would think involves a serious danger in this situation is the one relating to an admission against interest where the committee would make an admission in the report that could be used against the best interests of the hospital. As I pointed out earlier, that feature can be avoided by careful preparation of the reports and in fully recognizing the true responsibility, purpose, and function of these records.

It is well also to note, in conclusion, that the use of these types of committees is a commonplace practice throughout the country and that they are not something new or unusual. The use of such committees is rapidly expanding. Actually when the purposes of the committees are looked upon on an over-all basis they are only a new method of doing what the medical staffs of hospitals have always been supposed to do legally: to exercise responsibility over those men who work in the hospital in order to assure that due care is being exercised. The development of this type of procedure is thus only an improvement upon what has always been the real responsibility of the medical staff under the governing board of trustees to use in an effort to promote patient care and development and progress in hospitals.

DR. EPPERSON: Mr. McKay, your explanatory comments have been very informative and lend a great deal toward the legal reliability and the medicolegal aspects of the work of our committees.

To continue with our fifth panelist, we would like to have discussed at this time, "Benefits derived from the medical audit as viewed by (1) the patient, (2) the general public, (3) the hospital board of trustees, (4) the medical staff, (5) intern-resident training program, and (6) employed staff, as interpreted by the administrator of the hospital."

Administrator's view

MR. FULLER: First: In speaking of the value of a medical audit to a hospital, we must think of this, as of everything else about our hospital, first in terms of benefit to the patient. The patient—blessed, if you please, with confinement in a hospital using medical audits—is assured that laboratory and x-ray examinations, as well as medications ordered in his particular case, are necessary; and that these services are not ordered merely to produce hospital revenue or in a haphazard manner in the hope that one of many tests may reveal something worth while.

Further, a medical audit assures the patient that consultations are ordered as required or as needed, that there is proper diagnostic work-up before surgery and that only necessary operations are performed, that rules of the hospital are enforced, and that in general the hospital and staff, through self-imposed regulation, are striving to see that the best service possible is given to each patient.

Second: The general public, which is made up of your patients and the people of your community, any one of which might be the next new patient, can and will have confidence and pride in your hospital, if the hospital thinks enough of its patients to have honest medical audits frequently and regularly.

How do they know of these things? We know of them, and they will know of them by the same process that builds the reputation of a doctor or a hospital.

Third: Your board of trustees has a responsibility to the public that your hospital serves. This is a two-fold responsibility: to know and direct the financial side of the hospital, and to understand and control the professional side. The statistics and analytic reports obtained from the medical audits can assure the board that patients are receiving the best possible service, care, and treatment.

The audit may reveal weak points which can then be remedied. As an example, in the year 1952 statistics at a Michigan hospital showed a new-born death rate of an even 3 per cent. By diligent effort of the chief of the Pediatrics Department, through a medical audit in the rough and with the cooperation of all staff members, that death rate was reduced the following year to 1.6 per cent and has been maintained at an average of 1.8 per cent since.

How better to educate a board of trustees than through a proper presentation by the medical audit committee of its findings and corrective measures taken? Too many boards do not understand the professional side, nor do they have the chance to learn. Yet, they are anxious to know and understand staff problems.

The medical record librarian can many times see a trend indicating a let-down in a particular phase of hospital care; this information can be most helpful in correcting problems before they become acute. Medical audits, indisputably, result in better medical records. Adequate medical records assure insurance companies, Blue Cross, public health agencies, and others that your hospital is performing properly. Hospitals are being observed more and more closely

by all these agencies, not only financially, but from the professional medical care point of view. The public soon learns of your efforts and respects you for the job you are doing.

Fourth: Your medical staff must be constantly educated, first individually, as you here all know, by postgraduate work and sessions such as you are having here in Boston; and secondly, by groups—departments, staffs, and local and district societies. Medical audits are one of the tools which accomplish this education at both the individual and group levels.

When a case is discussed, bringing out both the weak and the strong points, all doctors involved in that case learn how better to handle the next case. The staff as a whole will accept criticism brought to them through proper channels and will take great pride in improving themselves as individuals in the quality of care given. Such reports bring home to the staff members the value of good records and might make it easier for the administrator and for staff committees to obtain their cooperation in maintaining records that will withstand scrutiny.

It is my own opinion that many times, in situations where a doctor may be giving what the medical practice standards committee feels is inferior service, better results might be obtained by informal interviews rather than by the doctor being called to a formal hearing. Such hearings put the doctor on the defensive and sometimes result in poorer rather than better cooperation. Of course, instances of flagrant violations of good standards must be handled formally and firmly for the good of all concerned, including the hospital.

Use of the medical audit as an educational tool has proved its worth time and time again; and what better means of raising medical or surgical standards at any stage or level than through an educational process?

Fifth: In an intern-resident training program, the medical audit or medical record review is a most potent teaching method. It gives the resident and intern the reasoning behind hospital records and establishes an appreciation of the value of all phases of medical work. It clarifies controversial subjects. It gives the trainee an insight into hospital function and, if properly handled, will show how hospital personnel—x-ray, laboratory, and nursing—can be much more effective if they are given their proper places in patient care.

The resident or intern, through his working with medical records and medical audit, readies himself for the future when he alone must be the final determining factor in the care of his patients.

Sixth: Many times patient care suffers because the nursing department is not properly advised regarding the full facts of the situation as it pertains to a particular patient—not a blanket "all of the facts," but all the necessary facts to allow them to properly give their best service. The nurses' experience and knowledge, and, yes, judgment in many cases is as much of a tool for the doctor to use as penicillin or a surgical knife.

The people who work for a hospital want to feel proud of the type of care given by that institution. It must be remembered that the average person thinks much bigger than we have a tendency to realize. He knows that nothing is perfect, in that there is always room for improvement. He realizes that investigations into the quality of medical care and the facing of facts, both bad and good, are the means by which perfection is attained.

When the hospital approaches medical problems with a realistic attitude, it gives all these hospital workers a feeling of pride in their institution, and on the grapevine travels the news—good or bad—to the farthest corners of the hospital.

Seventh: Finally, speaking personally as an administrator, all of the facts I have mentioned so briefly are continually in the daily thinking of your administrator, who is ever trying to raise the quality of patient care within your hospital. This can be achieved only by producing better doctors, better employees, better interns, better residents, better trustees, a better administrator, and finally—better patients.

Discussion

DR. EPPERSON: Thank you very much, Mr. Fuller.

Now that the panelists have completed their presentations, you may wish to direct questions to any one of them. I would like also to alert any members of the audience who might like to speak on this very important subject, telling us what medical audit means to your hospital staff and to the profession as a whole. To begin the discussion, I would like to ask Miss Dethlefs to describe a bit more specifically how she approaches the problem of the incomplete record.

MISS DETHLEFS: I check incomplete charts each Tuesday, listing and posting names of all that are over a week old. Originally from 7 to 14 days are allowed, depending on the date of discharge. If the work is unfinished by the end of another week, it is referred to the chief of staff. Ninety-eight per cent of the work is finished in this way, but if someone cannot make the grade staff privileges are automatically withheld. This means that a surgeon will be asked to complete his charts before he schedules an operation, or another physician will not be permitted to admit patients until the overdue charts are finished. Exceptions are made for late pathology reports and certain types of laboratory work.

DR. EPPERSON: Do you think that 7 to 14 days is a fair amount of time to allow for lateness of the charts?

MISS DETHLEFS: It seems to me that it should be.

DR. EPPERSON: I think that in practice, if you set a deadline, the staff will take as many days as you give them. If you give them 12 days, or 14 days, they will measure up to it. After a certain period you may see that the 12-day staff rule, with the exceptions that were mentioned, will suffice to encourage your staff to complete their records and have them available for review.

DR. RICHARD BORMAN (Des Moines, Iowa): Different hospitals seem to have different attitudes as to what should be included on the daily progress

record. What is the general policy regarding the daily evaluation of the average patient, excluding the one that is critically ill, and the inclusion of special treatments in the notes? For example, if you gave an osteopathic treatment, would that go into a daily note on a patient who was in his third day of a normal postoperative convalescence?

DR. EPPERSON: Perhaps Dr. Siehl can answer that.

DR. SIEHL: I think it is generally accepted that daily progress notes are not necessary, unless there are serious complications—in such cases even hour by hour notes should be made. However, for the average postoperative patient a note only every 2, 3, or 4 days is needed. If he is receiving daily osteopathic manipulative treatment, it is probably best to report it each time it is given, probably in the progress notes or somewhere on the chart.

DR. BORMAN: I made this point because in many instances institutions have grown suddenly, and the usual complaint of the intern is that he is in the operating room in the morning, back on the floor in the afternoon, has to take the onslaught of new histories before 5 or 6 o'clock, and must give the special treatments in the evening. If progress notes must be complete, the intern can find this an overwhelming task on a floor of forty or fifty patients, by 8 or 9 o'clock at night. I don't think there is any real conformity; different record librarians seem to have different rules. In our hospital this is becoming a problem.

DR. EPPERSON: I think we all recognize that problem, but we are bound by the fundamental requirement made by the Bureau of Hospitals that every patient must be seen every 24 hours and that sufficient records should reflect the progress of the case. In our hospital we have combined the intern's progress notes with the attending staff member's progress notes. We attempt to have the intern state objectively the things he sees and not try to philosophize about the reason behind it. In a way, it is like a nurse's notation; he states the facts and then is responsible for conveying that information to the proper authority—the attending physician. It is the attending physician's duty, by direction of the Bureau that governs our hospital, to make the necessary progress notes.

DR. JAMES M. EATON (Philadelphia, Pennsylvania): Has it been established who, in the final analysis, is responsible for the completeness of the chart? I am thinking of certain specific problems in connection with a combined service, where an internist and a surgeon would have mutual responsibility for a patient; or in another instance where dictated operative records have become lost or delayed. It has always been our contention that the one who renders a principal service to the patient is the one responsible for that chart. Sometimes, in an institution such as ours, where we have almost as many members on the staff as we have beds in the hospital, it becomes a complex problem. I have seen cases where three or four men give combined service in very complicated medical-surgical problems; the responsibility is shifted back and forth until finally, out of sheer exhaustion, the surgeon has to take over and complete the chart. I have also been wondering if there are any medicolegal connotations in connection with combined services.

DR. EPPERSON: I would like to direct the first phase of this question to Dr. Siehl, and the second to Mr. McKay.

DR. SIEHL: It is our general practice to delegate the responsibility of the chart to the physician rendering primary care; however, the physician rendering supplementary care must complete the portion of the chart that pertains to him. For example, if a patient is admitted by an internist, he would be chiefly responsible for the record even though he calls for surgical consultation and has an operation performed on the patient. As long as he maintained some of the case management, he would be primarily responsible, while the surgeon would complete only the operative record. If a surgeon should call an internist on consultation, the internist would be responsible for some of the orders, laboratory work, and consultation report, while the surgeon maintained primary responsibility for the chart. If a general practitioner would admit a patient and call in a surgeon or internist, then drop off the case and leave management to the specialist, we would hold the specialist responsible for the chart.

MR. MCKAY: The responsibility each physician has in a case to some extent determines what his duty is for the records, since the records in a sense are basic evidence to establish whether he did or did not provide the standard of care that the law requires. It would seem to me that responsibility would be in relation to the individual physician's duties in a case. To some extent it comes down to what is customary in the community; all doctors would have some responsibility and it is a matter of their dividing it among themselves. Ultimately, of course, care has to be given by one or another; perhaps local rules and regulations would cover borderline cases where it is not easy to say who is responsible, or else the responsibility would be placed back with the primary physician.

DR. SHERMAN MEYER (Phoenix, Arizona): The medical record chairman in our hospital told us recently that when a general practitioner admits a

A medical audit assures the patient that consultations are ordered as required, that there is proper diagnostic work-up before surgery, that only necessary operations are performed, that rules of the hospital are enforced, and that the hospital and staff are striving to see that the best service possible is given to each patient

patient, and it is later found that surgical care is needed, that the surgeon is called on the basis of consultation in each instance. The surgeon would take complete charge of the case until the surgical emergency is over and then it would be his responsibility to transfer care back to the general practitioner before the patient is dismissed. Under this system, in order to have an operation performed the general practitioner must ask for consultation, the surgeon must recommend surgery, and then the general practitioner must order him in writing to go ahead and take over in the case. The medical record chairman contends that he does not feel that the surgeon has the legal right to take over a case unless he has an order to do so on the chart by the doctor who admitted the patient. This seems like a lot of consultation reports to me, but if this is the way it is supposed to be done, fine.

DR. SIEHL: If a patient is admitted by the general practitioner, and the surgeon is called subsequently to perform an operation, technically he should write a consultation report. However, it is seldom done except where consultations are required by bylaws.

DR. EPPERSON: That is one way to obtain a higher consultation rate, and it does qualify as a consultation. However, once a surgeon makes a general recommendation that is accepted by the general practitioner he can no longer be his own consultant on a case which requires consultation in a given approved hospital. It is then necessary to find someone with comparable privileges to round out the requirement for consultation, in instances such as sterilization procedure or cesarean section.

One point is that the general practitioner is (as he should be) insisting upon certain responsibilities in patient care. I think that sooner or later you will find the need to integrate the general practitioner into the care of a surgical patient if for no other reason that to continue the doctor-patient relationship. The general practitioner would then have responsibility for recording any care he gives to the patient while hospitalized. This will be represented in the progress notes which he may continue as long as he wishes to participate in the case. In that way he may be earning a fee for a service which the patient and the family would appreciate. Then that physician can qualify for a portion of the fee and the total care of the patient without any problems such as questions over fee-splitting.

DR. EATON: It would seem to me that there must be a definition of rights, privileges, and duties of the consultant. As I understand it the consultant is only that and his duties cease at the time of his consultation. It does not include treatment of the patient in the hospital. If such a man is to treat a patient in the hospital, he must be given the right to do so either by transfer of service or by combined service. Otherwise the consultant will have no actual right to interfere or direct treatment of the patient except by suggestion. Irrespective of how the patient is handled after the operation is completed, it is perfectly within the realm of possibility that the patient would be transferred back to the first physician on the case; however, the surgeon or any other specialist who is called upon to treat the patient must have some authority recorded as part of the hospital record, which delegates the care to him. Otherwise, I am afraid that he is in hot water from a medicolegal standpoint if something should happen.

MR. MCKAY: Certainly the doctor who is providing the treatment and who is the responsible party has to control the records. I think it is largely a local matter that would have to be discussed in each particular hospital, and it seems to me that it could become very complicated. Certainly if the general practitioner assumed responsibility for the record all through the case he would also be assuming responsibility for all the care and would be liable for anything that happened all through the case. That situation certainly could involve intricate problems of liability and responsibility. However, if it is handled as Dr. Meyer has described, it would seem to me that the responsibility is separated. It is largely a question of whether professional standards in the area permit that type of arrangement.

DR. FLETCHER: It seems to me that if a surgeon is called in by an attending physician who has already admitted a patient to a hospital and is treating him medically that it should be indicated to the consultant whether he is being asked for diagnosis only or for both diagnosis and management. The consultant actually writes out his report and signs it. Then, as Dr. Eaton has indicated, he proceeds no further unless specifically directed to do so by the attending physician. On the other hand, it would seem to me that when the surgeon participates in the case—and by "participates" I mean operates on the patient—whether his name is on the chart as one of the admitting physicians or not he is still required by the Bureau of Hospitals and I think he is also legally liable to write out a progress report on that particular patient. He must record that he has seen the patient and examined him, and must record his findings as well as his recommendation for the type of operation that he feels will be of benefit. This has to be there in order to perform an operation on the patient, whether or not it is considered a consultation report.

DR. ARTHUR L. HARBARGAR (Akron, Ohio): In our hospital we are contemplating supplementing the work of the three members of the medical audit committee with six members of the staff chosen alphabetically each month. This is for purposes of education. It is also planned to incorporate one intern per month in the work. There will be penalties involved if the staff does not participate, or at least this is the contemplated move. My question is this: Has anyone had experience with this program and what were the results?

DR. SIEHL: We have not seen fit to do that particular thing in our hospital, although I have been in hospitals where it has been done and it has been stated that it has worked out very well.

MR. FULLER: In our hospital meetings in Boston, a number of persons have stated that they are going to use some sort of alphabetical arrangement by which all members of the active staff will participate on these committees. In this case it does not apply

to the intern, except that he will be subjected to a better training by contact with the individuals who do participate.

DR. LOUIS PESSIN (Philadelphia, Pennsylvania): I am chairman of the medical record committee at the Metropolitan Hospital in Philadelphia. We have attempted this alphabet rotation on two different occasions within the last 4 years. I am sorry to report that in our hospital it did not work. If we had established penalities I am afraid too large a percentage of the staff would have been penalized and the functioning of the hospital would have suffered. We solved our problem by forming a large record committee. It was drawn up to represent each of the four clinical departments plus a large group of interested general practitioners. The doctors assigned to the committee were asked in advance whether they were interested and willing to work. When we got enough interested parties we had the committee complete.

Our emphasis is on floor checking. Each member of the committee is assigned to a segment of the hospital and one specific department's chart; one member, for example, is on 5-north surgical and another on 5-north medical, and so on throughout the hospital. We use two different forms. One is the listing which each committee man makes of the charts that he checks and what he finds on them. This is filled out in duplicate; one copy is permanently filed, and the duplicate is used by the member of the committee to go back and recheck the charts to see whether his suggested corrections have been made. The second form is a temporary one which is placed on the chart with suggestions from the committee member to the attending surgeon.

This system has worked out so well that I feel that our record room problems have been reduced to a minimum. Our very excellent record librarian is at last happy with the state in which the charts come to the record room. Our committee meetings are now limited to once a month at which time we spot check completed charts for professional excellence. We also discuss matters of policy and procedure.

We have had this system in effect now for approximately 10 months and in that period the problems have been remarkably reduced. It seems as though the psychology of having it known that someone is on the floor checking charts two or three times a week is enough to keep them alert. We do enforce bimonthly deadlines for chart completion. Suspensions are only involved in cases of gross neglect or instances where repeated notices were ignored. However, once a suspension is invoked it lasts for 7 days beyond the time the charts are brought up to date. In other words a man is not suspended on Monday, then completes his charts Monday night, and admits patients on Tuesday. He has to wait until the following Monday before his privileges are reinstituted. We have found this system works very well.

DR. EPPERSON: Does anyone wish a blueprint of his program? I am sure he speaks with considerable experience.

Gentlemen, this has been a lengthy, perhaps, but very informative type of presentation. We trust that as a result you have a clearer picture of the objectives of medical audit. It can serve a dual purpose in the solution of the problems of health cost in this country, so that we can continue in the fundamental American way of free choice of physician by the patient, with the establishment and maintenance of the doctor-patient relationship, and with the preservation of the physician's right to set fees for services rendered. We should be able to look at the medical record to justify and document these points in support of our position—that we shall be able to carry out our work in an atmosphere of medical freedom in a hospital which is reflecting its costs and charges on the only acceptable criteria: justifiable needs of the patient, professionally arrived at and established through the medical audit of the physician's practice.

I wish to thank the panel members for their splendid cooperation in developing this presentation, for the great deal of research and diligent pursuit of the subject material that was required, and for their excellent presentations. This discussion has stimulated the hard core of our profession here assembled and provided provocative and important information.

1. Huffman, E. K.: Manual for medical record librarians. Ed. 4. Physicians' Record Co., Chicago, 1955.

2. Plunkett, R. J., and Hayden, A. C., eds.: Standard nomenclature of diseases and operations. Ed. 4. Blakiston Co., New York, 1952.

Cancer research*

CARL G. BAKER, M.D.,† Bethesda, Maryland

Since 1900, there has been a continuing decrease in mortality from infectious diseases, brought about by better public health methods and the availability of successful chemotherapeutic agents. Concomitantly, however, the incidence and mortality rates of chronic diseases such as cancer and cardiovascular disease have been rising since greater numbers of people now live to old age (Fig. 1). Because of these changes, considerable emphasis in medical research is being given to the common chronic illnesses, particularly cancer.

The rate of incidence of cancer increases fairly sharply around the age of 30, and continues to increase throughout the life span, except in very elderly men (Fig. 2). Incidence in the male population is higher than in the female, except between the ages of 11 through 58; there is a marked difference between the ages of 30 and 50. The higher incidence in women during this period is attributed in large part to the frequent occurrence of cancer of the breast and uterine cervix (Fig. 3). The incidence of leukemia and lung cancer has been increasing in this country over the last several years, while incidence of cancer of the stomach has been decreasing. The incidence in other countries varies somewhat from the distribution in the United States; in Japan, for example, stomach cancer is more frequent and breast cancer less frequent than in this country. If the current rates continue (Fig. 4), 40 million people now living will develop cancer during their lifetime and 26 million of these will die of the disease. The most likely way to reduce these figures is through continuing medical research in both basic sciences and applied cancer studies.

Considerable progress has been made through such research in recent times. At the beginning of this century most people who developed cancer died of the disease. Thirty years ago, only one person in ten could be saved by treatment, and 20 years ago the proportion was one in seven. Today, the figure is one in three, and there are currently living in the United States about 800,000 people who have been saved from cancer. These figures represent definite achievement against cancer which did not come about through accident. It is the outgrowth of research and the application of research findings. This impressive accomplishment should be and is noted with pride by both the layman and the professional person. Nevertheless, despite the improved understanding and better management of cancer, the disease continues to be a major public health problem. It is the second highest cause of death in the United States, taking a toll of about 250,000 persons each year. Furthermore, an estimated 450,000 new cases

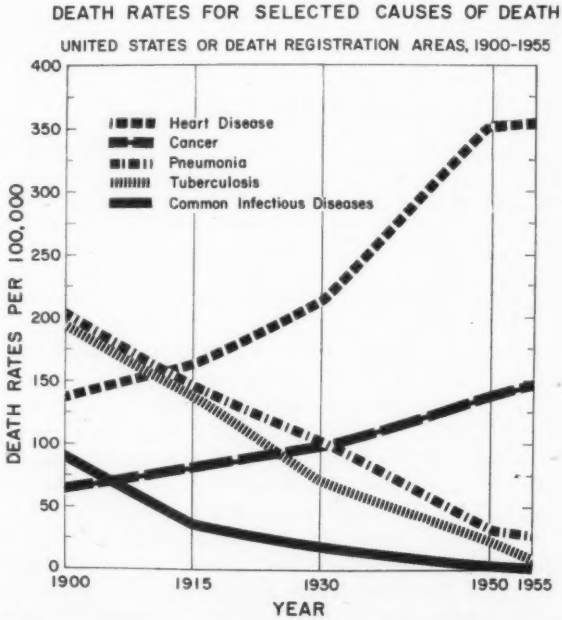


Fig. 1. Comparative death rates for infectious and chronic diseases.

*Address given before the 63rd Annual Convention of the American Osteopathic Association, Chicago, July 15, 1959.

†Dr. Baker is Assistant Director of the National Cancer Institute, National Institutes of Health, Public Health Service, Department of Health, Education, and Welfare.

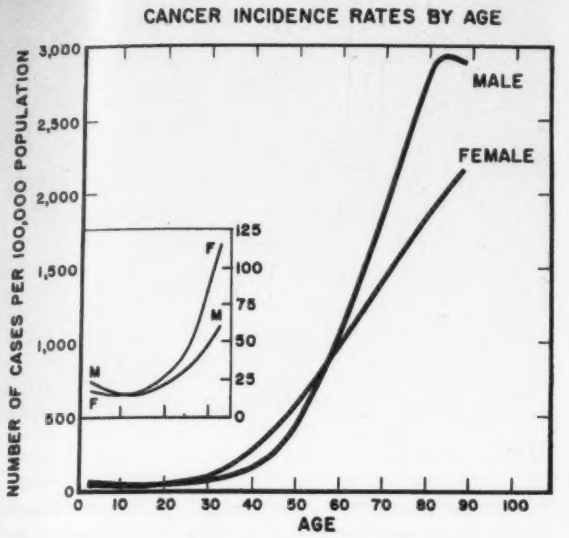


Fig. 2. Cancer incidence according to age of patients.

are diagnosed each year, and about 700,000 patients are under treatment at any given time. Apart from the grief and suffering of cancer victims and their families that these statistics represent, the annual hospital bill for cancer patients runs about 300 million dollars, and the economic burden on the nation is more than 12 billion dollars a year in lost goods and services.

Further progress against cancer can come about

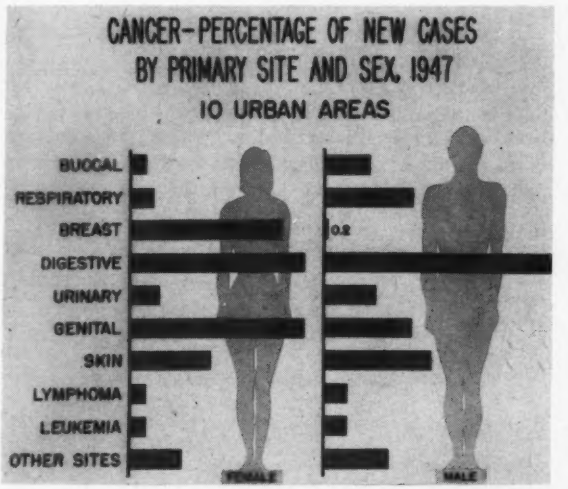


Fig. 3. Distribution of cases of cancer according to sex of patients and primary site of lesions; data from 10 urban areas of the U.S., 1947.

only through better application of current knowledge and acquisition of new information of significance. With present knowledge and resources, it is estimated that ideally we should be saving one of every two persons with cancer, instead of one in three. This would represent a saving of an additional 75,000 lives a year above the present 150,000.

Current cancer research is composed of a wide variety of approaches and disciplines, ranging from very basic investigations to applied studies in the clinic or in the field. Some of these investigations build on currently accepted theoretical principles, enlarging our concepts and increasing our understanding of biologic and medical problems; others utilize purely empirical approaches. For example, basic studies on nucleoproteins, not only by investi-

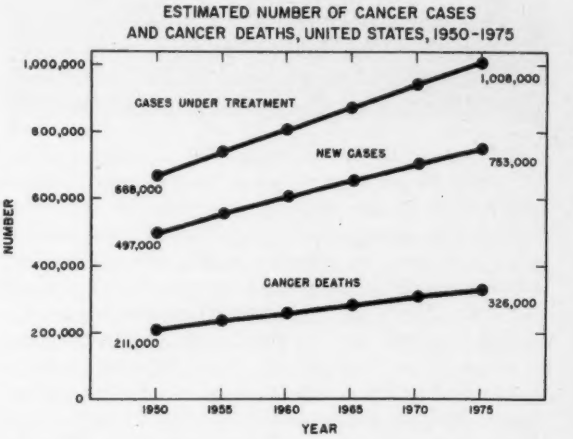


Fig. 4. Trends in cancer incidence and mortality, 1950-1975.

gators working on cancer but also those in other fields, are proving fundamental information on tumor properties, hereditary relationships, and viral causation. Field studies and epidemiology in the cancer field uncover correlations important for understanding the nature of cancer and for new research leads.

Environmental studies (Fig. 5) have demonstrated that a number of agents can produce cancer at various sites in the body under certain conditions. For example, aromatic amines, such as 2-naphthylamine, can produce urinary bladder cancer in workers exposed to the compounds. Steps taken by manufac-

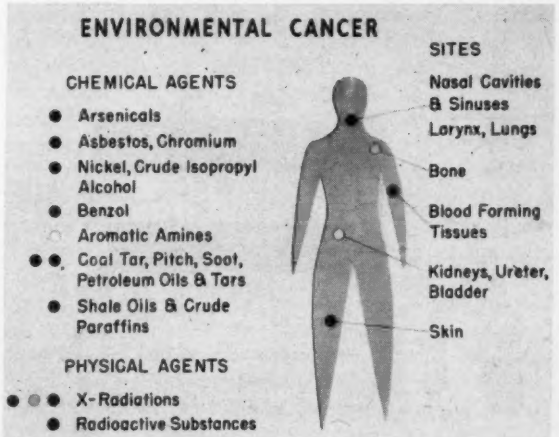


Fig. 5. Environmental agents inducing the development of cancer.

turers to prevent exposure to these agents by the workers has led to a reduction in the number of cases of this type of bladder cancer.

One of the most important measures for cancer control is the detection of uterine cancer by means of the Papanicolaou exfoliative cytology procedure involving stained smears of cells obtained during vaginal examination. Evaluation of the usefulness of the laboratory research findings as a suitable means for case finding in the field was undertaken a few years ago by the National Cancer Institute in conjunction with health and medical authorities in the Memphis, Tennessee, area. A project was established to apply the test to 165,000 women in the area. Examination of the first 108,000 women detected 766 cases of cancer that were subsequently diagnosed microscopically, of which about one-half (393) proved to be intraepithelial carcinoma (Fig. 6). Fully 90 per cent of these "cancer-in-situ" cases, which have a cure rate approaching 100 per cent, were totally unsuspected. The other 373 cases were invasive cancers in different stages, 30 per cent of which were also unsuspected. In the second year of the study, 33,000 of these 108,000 women received a second cytologic test. In this group another 83 cases of cancer were detected, of which 72 were preinvasive and 11 invasive. The invasive cancer rate on the second screening was only one tenth as high as on the first screening. A recent development in this area is the cytoanalyzer (Fig. 7) which can automatically screen cervical-smear specimens and discard a large majority of negative slides. With further improvements in the rate of feed of slides, the apparatus will permit a considerable decrease in the time required for screening smears, since fewer slides will need to be read by skilled technicians and pathologists, professional individuals who are in short supply.

Interest in two areas of cancer research is now particularly high: (1) viruses in relation to cancer, and (2) cancer chemotherapy.

Research findings in the cancer and virology fields in recent years have led to increased interest among

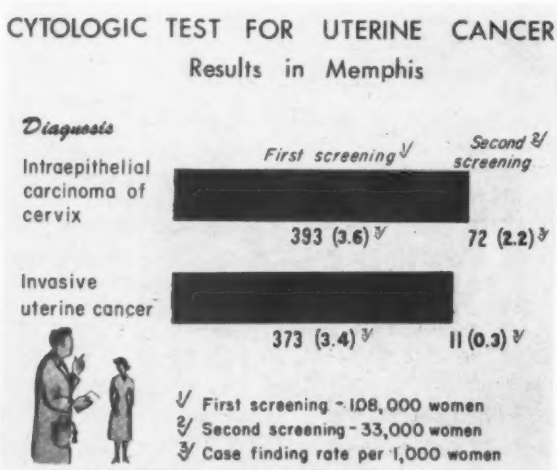


Fig. 6. Results of cytologic screening tests for uterine cancer, Memphis, Tennessee.

Fig. 7. The cytoanalyzer, designed to provide automatic screening of smear specimens.

investigators in the relationships between viruses and cancer, particularly as regards viruses as causative agents of tumors. Since the first discovery of a direct causal relationship between tumors and a virus more than 50 years ago (Table I), more and more evidence has been collected which implicates viruses in the initiation of various types of tumors in a wide variety of animals and in plants. Until 5 or 6 years ago, however, only a few investigators ascribed high significance to viruses as causative agents of tumors which spread widely in the body. A new era began with a series of reports (Table I)

TABLE I—HISTORICAL DEVELOPMENTS IN VIRUS-CANCER RESEARCH

1903-1936	
1903	Borrel first suggested viruses cause cancer
1908	Ellerman and Bang discovered animal virus tumors
1911	Rous discovered animal virus tumors
1933	Shope, solid tumor in rabbits
1934	Lucke, kidney cancer in frogs
1936	Bittner, breast cancer in mice
1951-1959	
1951	Gross, leukemia in mice
1956	Stewart and Eddy, multiple tumors in mice, rats, and hamsters
1957	Friend, leukemia in mice
1957	Friend, immunized mice against leukemia
1957	Burmester, immunized chickens against visceral lymphomatosis
1957	Schwartz enhanced mouse leukemia by injection of human leukemia tissue
1957	Dmochowski observed virus particles in human leukemia tissue
1958	Stewart and Eddy immunized hamsters against polyoma virus
1959	Moloney, leukemia in mice

by three research groups: (1) Gross, on the production of leukemia in mice 1 or 2 years of age which had been inoculated with cell-free extracts as newborn animals; (2) Friend, on the induction of a form of leukemia 2 or 3 weeks after inoculation of cell-free material into a particular strain of mice of various ages; and (3) Stewart and Eddy, on the production of multiple tumors in different species (mice, rats,

and hamsters) with cell-free extracts containing an agent now called the "SE Polyoma" virus (Fig. 8). Twenty-six histologically different types of tumor have been produced by the polyoma virus. Virus particles have been demonstrated by electron microscopy in purified viral preparations (Fig. 9) and in cells, and in other studies viruslike particles have been noted in electron microscope preparations of lymph nodes from a patient with acute leukemia. Also, extracts of leukemic tissues from man when given to strain Ak mice have accelerated the production of leukemia.

Successes in these investigations and in the patient, painstaking, and sustained studies carried out on tumors in fowl by such investigators as Bryan, Beard, and Burmester have brought about a change in attitude among the members of the scientific community which allows tentative acceptance, as a working hypothesis, of the idea that viruses may be responsible for many tumors including cancer in man. Simultaneously with this viewpoint, new experimental approaches have been developed in several disciplines, particularly virology, including the important work on poliomyelitis. Tumor viruses, like other viruses, are being grown on tissue culture, and in some cases the potency of the tumor-causing viruses has been enhanced by passage through tissue culture. Both passive and active immunity have been produced in certain laboratory animals which protect them from developing tumors when the virus-containing material is subsequently introduced into the animals. In one experiment, 97 per cent of the immunized animals lived for 5 months without developing tumors, while 67 per cent of the unvaccinated control animals developed tumors and died during the same period of observation. Considerable experimental effort is now under way to elucidate the viral relationships in human cancer. No evidence is yet available which implicates viruses in the causation of human tumors, but if this can be demonstrated, successful immunization against some types of tumors in man may become a reality.

Fig. 8. Multiple tumors induced in a mouse by the Stewart and Eddy polyoma virus; the tumors shown include epithelial thymoma, renal sarcoma, and tumors of the parotid, submaxillary, and sublingual glands.

Fig. 9. Electronmicrograph of a purified polyoma virus preparation, × 17,000.

One of the major goals of cancer research is the development of a drug which will destroy cancer tissue in humans without adversely affecting the normal tissues. Both theoretical and empirical approaches are used in very active and greatly expanded chemotherapy programs throughout the United States. Several chemical agents of various types (sex hormones, polyfunctional alkylating agents, antimetabolites, antibiotics and others) have been developed over the past 10 years which produce a definite benefit to patients with certain types of cancer. For example, over the past decade at the Children's Cancer Research Foundation in Boston, the 50 per cent survival time of children with acute leukemia has been increased through the use of these drugs from 4 months to 14 months. Many cancer patients have been given additional years of comfortable life. Some types of cancer in laboratory animals have been eliminated through the use of drugs alone. However, all too frequently the tumor tissues become resistant to the action of drugs even when they responded on initial administration. Furthermore, many tumors do not respond at all to any known drugs.

As our understanding of cancer grows, more and more leads will develop which will suggest new types of therapeutic agents. Because of the complexity of living matter, however, gaining of deep understanding is a difficult and slow process. Therefore, along with studies aimed at this goal, empirical testing of currently available and newly synthesized materials is being vigorously pursued.

To press the search for effective chemotherapeutic agents, the Cancer Chemotherapy National Service Center was established in 1955 on the grounds of the National Institutes of Health at Bethesda as the staff organization of a national voluntary program of cooperative research (Fig. 10). Staffed jointly by the sponsoring agencies, the National Cancer Institute, the American Cancer Society, the Damon Runyon Memorial Fund for Cancer Research, the Veterans Administration, the Atomic Energy Commission, and the Food and Drug Administration, the Center coordinates the procurement and screening of chemi-

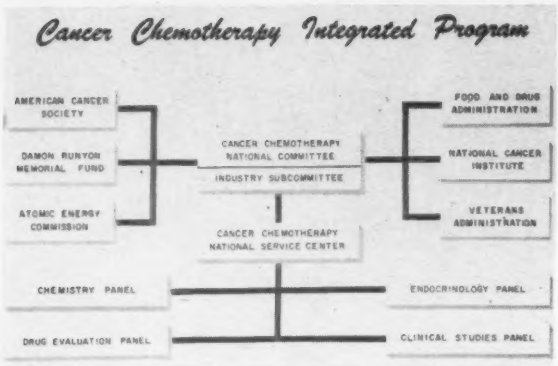


Fig 10. Organizational chart of the cooperative program for research in cancer chemotherapy.

cals, the necessary pharmacology and toxicology studies, and the prompt, adequate clinical trial of promising agents in man. The Center program is carried out with guidance of groups of advisors expert in scientific areas pertinent to the chemotherapeutic approach to the cancer problem. The help and cooperation being received from many industrial firms are of major importance, since industry can provide compounds, certain skills, know-how, and facilities of special significance.

To date about 38,000 chemical compounds and over 30,000 antibiotic filtrates or "beers" have been screened in animals for antitumor activity. More than 100 agents which showed some promise in screening are currently being evaluated in clinical studies in patients in more than 175 hospitals throughout the United States by cooperating clinical groups. Protocols, based on the best statistical and other advice available, are jointly shared by different clinical groups to permit rapid accumulation of sufficient sound data for drug evaluation. Although no cures in man have been effected by the use of drugs, many cancer patients have benefited from some of the 100 agents in clinical trials. It is still too early to have adequate evaluation of most of these newer agents. Many other materials continue to be synthesized and collected and are in process or awaiting testing. Treatment involving a combination of drugs is being investigated and has in some cases given better results than treatment with single compounds. As results are obtained, evaluated, and documented, information is transmitted to the physician for use in his practice.

No one can predict when a real cure for cancer is likely to be available. It is probable that our first successes will be with certain types of cancer rather than all types. Eventually, however, if extensive understanding of the cancer process is gained, it may be possible to devise a treatment that will be effective against all types of cancer. Only through sustained and dedicated research effort will successful therapy and prevention of cancer be attained.

Cardiac arrest and resuscitation: Then what?

LAWRENCE EVERETT GIFFEN, D.O., Jefferson City, Missouri

Cardiac arrest, an all too frequent occurrence, has been brought to the attention of almost everyone remotely connected with the operating room.

Technics of resuscitation have been described by many authorities in many journals. Books have been devoted entirely to cardiac arrest and resuscitation; a recent one by Stephenson[1] has a bibliography of 51 pages listing some 1,800 references pertaining to the subject. Successful resuscitation of patients who suffer cardiac arrest in the operating room has become almost commonplace in current medical practice.[2] A group in Cleveland has been conducting a course on cardiac arrest and resuscitation open to all interested physicians.[3] The lay press has been active, and medical science writers for the "slick" magazines have popularized this sensational tragedy.

So, it cannot be said that the subject has not been brought to the attention of physicians. Any surgeon, anesthesiologist, or internist, regardless of how isolated or how small the community or hospital in which he works, is aware that cardiac arrest can and does occur. It can happen during the most minor operation as well as during the most extensive.

Without going into the causes of cardiac arrest, such as anoxia and vagal stimulation, there is one thing common to all cases in the operating room: that is anesthesia. As Dr. Kenneth Keown has many times stated in his lectures to senior medical students at the University of Missouri, there is no such thing as a minor anesthesia.[4]

Since operating teams have become aware that cardiac arrest does occur and that resuscitation can be effective if immediate action is taken, the more conscientious and aggressive groups, even in the smaller towns and hospitals, have equipped their operating rooms and trained their personnel to deal with this possibility. To be sure, the small hospital cannot afford expensive monitoring equipment and every new gadget that surgical supply houses put on the market to resuscitate the heart, but most of them do have a defibrillator.

Some 4 years ago, after having been bombarded with literature in our journals and lectures at our meetings, we decided to buy a defibrillator. There are two general surgeons, one EENT surgeon, and one anesthesiologist on our staff. We each invested $75.00 in this piece of equipment. After each member of our team was instructed as to the operation of the defibrillator and a plan of action was instituted for an event of arrest, the machine remained in the corner ready to go at a moment's notice. We felt at that time, and we still do, that with an alert anesthesiologist, active surgeons, and a defibrillator we could recognize and deal with such an emergency. This brings us to the purpose of this paper: After resuscitation, then what?

Our surgical team has handled some 12,000 operations in the 9 years our hospital has been open. Not one of these was a thoracotomy. Our surgeons, while giving excellent postoperative care for cholecystectomies, gastrectomies, and tonsillectomies, had little knowledge regarding postoperative thoracotomy care. Our hospital is a 50-bed general hospital, and all patients needing chest operations go to the medical center at the University of Missouri where such facilities are always available. This is probably very common; there are many good 50-bed hospitals in our country and very few of these handle cases of chest surgery. Heart and lung operations rightfully should be performed in our large medical centers. In Missouri 72 (41 per cent) of the hospitals licensed by the Department of Health have 50 beds or less.[5]

As the case report will show, cardiac arrest was promptly recognized, resuscitation was started immediately and successfully, but the last point of the triad of (1) recognition, (2) resuscitation, and (3) after-care, was poor. It had not been brought to our attention that a postoperative thoracotomy patient requires continuous good care, with a physician constantly in attendance to manage the many little things that are so important to his welfare. As an example, we did not know that supraventricular tachycardia with hypotension is not too uncommon following a thoracotomy in a young patient. When these symptoms appeared, we thought our patient was in shock and succeeded in overloading his circulation by administering fluids. His urinary output was minimal and he promptly manifested pulmonary edema. This necessitated performance of tracheotomy and use of capryl alcohol to dry up the edema. Then his temperature went up to 105 F. and it was necessary to pack him in ice and alcohol for 36 hours.[6] This in itself is a good feat—trying to pack a person in ice cubes in a hospital bed in the middle of a Missouri summer and keeping the melted ice on the floor from becoming ankle deep! All in all we were like my favorite football team; we did well in the first half, but were pushed all over the field in the second half before winning by one point.

Case report

A 15-year-old white male was admited in the early morning of June 3, 1959, for a tonsillectomy. Laboratory work done in the outpatient department 2 days earlier showed normal results, and a chest film was also reported as normal. Preoperative medication included Nembutal, 50 mg., 1½ hours before operation, and morphine sulfate, 10 mg., with atropine, 0.3 mg., 45 minutes before operation. The attending surgeon chose to do the operation under local anesthesia. His total dose of procaine was 200 mg. (20 cc. of a 1 per cent solution), with 0.5 cc. of epinephrine 1:1,000 added.

The operation was uneventful until several minutes after its completion when the patient, while waiting for the stretcher, suddenly slumped over sideways in the chair. He was placed immediately in a prone position where, to the consternation of the attending physician, he was found to have no pulse. Within a matter of seconds the patient was transferred across the hall to No. 1 Surgery; an endotracheal tube was inserted easily and oxygen was given. At the same time the emergency cardiac arrest pack was opened and a thoracotomy performed. No bleeding was observed other than dark blood as the chest was opened. The heart was found in asystole. Active cardiac compression was started some 75 seconds after the cardiac arrest alert signal was given. Compression was given alternately by two surgeons for about 25 minutes before any fibrillatory activity of the heart was noted. While this was going on two cutdowns with 18-inch needles were started. The patient was given oxygen with controlled respiration. Voluntary inspiratory efforts were noted occasionally. During these 25 minutes the patient was given intravenous Xylocaine, 40 mg.,[7] and 1:1,000 epinephrine diluted with 9 cc. of saline. The other intravenous apparatus contained a combination of Levophed, 4 cc., and methoxamine, 40 mg., in 500 cc. of distilled water.

When cardiac defibrillatory efforts were noted the electrodes of the defibrillator were applied to the heart and two shocks of 1 second at 110 volts were given in quick succession. This was found to be the most effective. Initially we used 0.1 second at 110 volts, with a single shock, but this did not convert the fibrillation. With the heart again in asystole, compression was again started. The color of the patient was much improved and the pupils showed

some reaction and were less dilated; however, a peripheral pulse was not yet palpable.

The patient alternated between fibrillation and asystole for another 15 minutes before an occasional good beat was observed. Two strong shocks successfully converted the fibrillations to asystole, and compression was again instituted. After approximately 45 minutes a few occasional good beats were followed by a regular pattern of spontaneous cardiac activity. This was observed for 15 minutes and then the chest was closed with an underwater seal.

By this time respirations were spontaneous and the patient was reacting. He was aware of his surroundings and was able to say his name. He was transported to the recovery room where it was noted that his pulse rate was 130 with a blood pressure of 120/70. However, his pulse rate gradually went up over a 2-hour period to between 160 and 170, and the blood pressure went down to 88/60. This was erroneously diagnosed as shock due to blood loss. There seemed to be a considerable amount of bleeding from the thoracotomy incision; we thought it came from the internal mammary artery which had started bleeding after his blood pressure had come up. At this time we started giving blood and fluids as replacement therapy, and during the next 4-hour period succeeded in overloading his circulation to the extent of 3,500 cc., with an output of less than 500 cc.

While in the process of heroically putting our patient in pulmonary edema we talked to Dr. Jack Mart, cardiologist at the University of Missouri Medical Center, who mentioned that supraventricular tachycardia with a concomitant lowered blood pressure is not too unusual in younger patients following a thoracotomy. By this time, however, we were really in trouble. Our patient had pulmonary edema and a second period of hypoxia, and his temperature went up to 105 F. More help was called, this time from Dr. Phil Hitchcock, anesthesiologist at the Medical Center, who suggested a tracheotomy, capryl alcohol to dry up the edema, and hypothermia. This was accomplished in that order and by 9:00 p.m., some 13 hours after surgery, we had matters under control. Our hypothermia consisted of packing the patient in ice and adding isopropyl alcohol. We maintained his temperature at about 92 F. Following the second episode of hypoxia the patient was not rational and remained in this semiconscious state for about 3 days. We kept him in ice for about 36 hours. He gradually became rational and aware of his surroundings, and pulse, blood pressure, and temperature became normal. We removed the thoracotomy drain and tracheotomy tube and allowed the patient to walk. The remainder of his hospital stay was uneventful. He was dismissed in good condition on June 14, his eleventh postoperative day.

The patient has been seen at regular intervals for the past 8 weeks and seems entirely normal physically except for a tachycardia, and normal mentally except for a lapse of memory concerning the first 6 or 7 days of his hospital stay. The boy is active and alert, and the parents say they can see no difference in him since his recovery. He has been active in sports and his coordination has been as good as before his operation. He was last examined August 9, 1959, about 9 weeks after the cardiac arrest. His blood pressure was 110/80, pulse 120, and heart regular in rate and rhythm. His weight was 115, which was about 15 pounds lighter than his preoperative weight. He was able to do schoolwork as capably as before. He seemed in no way adversely affected, either physically or psychologically, by his experience.

Summary

The men in our teaching centers have done a marvelous job of teaching about cardiac arrest and resuscitation in areas of early recognition, immediate thoracotomy, and cardiac compression and defibrillation. This is probably sufficient for the thoracic surgeon since he knows how to handle thoracic cases postoperatively. Our surgeons know how to handle cholecystectomy and gastrectomy patients postoperatively; however, cardiac arrest respects no particular branch of the surgical specialties. It can occur after a tonsillectomy, as it did in our case, as well as during a thoracic procedure. The proper care of the patient following cardiac arrest should be brought to the attention of every surgeon who might someday have to open a chest to save a life.

420 E. High St.

1. Stephenson, H. E.: Cardiac arrest and resuscitation. C. V. Mosby Co., St. Louis, 1958.
2. Seidman, J., *et al.*: Cardiac arrest occurring outside operating room; demonstration of effectiveness of trained resuscitation team. J. Am. M. A. 170:1053-1055, June 27, 1959.
3. Hosler, R. M.: Training in resuscitation of heart. Ohio M. J. 48:228, March 1952.
4. Keown, K. K.: Anesthesia for surgery of heart. Charles C Thomas, Springfield, Ill., 1956.
5. Cassel, W. J.: Personal communication.
6. Williams, G. R., Jr., and Spencer, F. C.: Clinical use of hypothermia following cardiac arrest. Ann. Surg. 148:462-468, Sept. 1958.
7. Hitchcock, P., and Keown, K. K.: Management of cardiac arrhythmias during cardiac surgery. South. M. J. 52:702, May 1959.

EDITORIALS

THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

This periodical is the official publication of the American Osteopathic Association

Editor	Raymond P. Keesecker, D.O.
Associate Editor	Katherine Becker
President	Galen S. Young, D.O.
Executive Secretary	True B. Eveleth, D.O.
Business Manager	Walter A. Suberg

Committee on A.O.A. Publications—Arnold Melnick, D.O., chairman; Hobert C. Moore, D.O., William B. Strong, D.O.

Readership

For the second time (the first was in 1954) in the Association's history, the D.O. readership of its publications has been surveyed. The report has been made available in a brochure entitled "Survey of Osteopathic Publications with National Distribution Read by Doctors of Osteopathy." Included in the survey for the first time were the only other osteopathic magazines of national circulation, *The Journal of Osteopathy*, published by the Kirksville College of Osteopathy and Surgery, and *The Osteopathic Profession*, privately published.

The study was based on three general questions asked of 401 doctors of osteopathy registered at the 1959 A.O.A. Convention in Chicago; this large sample constituted 52 per cent of physicians registered. The questions asked concerned: (1) the amount of time spent with each publication; (2) the publication(s) used as a source of professional information; and (3) value or usefulness of each publication.

The investigation was done under the direction of Professor Edward S. Gordon, chairman of the Marketing Department of Roosevelt University, Chicago. It was sponsored by the American Osteopathic Association, and was a project of its Business and Advertising Manager, Walter Suberg. Although the survey and its results are of great significance to manufacturers who buy the advertising pages of these professional magazines for exhibition of their wares, every member of the profession should find the facts presented in the brochure-report a matter of high professional pride and interest. The results of the survey, especially as they pertain to A.O.A. publications, are likewise encouraging to their editors, to the various cooperating departments of the Central Office, and to the A.O.A. Board of Trustees.

On the basis of total time per issue spent in reading each publication, and a corollary—whether the reading was completed within one sitting or over a period of more than 4 weeks—THE JOURNAL far outweighed its contemporaries. This it likewise did when judged as a source of reliable information and as a generally useful medium. One doctor's phrasing, "it comes closest to giving me what I want," may possibly explain THE JOURNAL's wide acceptance. Only about 1 per cent of doctors surveyed admitted spending no time in reading THE JOURNAL, in comparison with the 1954 survey when 7 per cent of osteopathic physicians admitted reading practically none of the magazine.

THE FORUM was shown to be read widely and relatively quickly, findings consistent with its character as the profession's news magazine. Most readers grasp its purpose: To give general news about the profession and its affiliated groups as well as to report activities of organized osteopathy other than those of the Association itself. "It most clearly reflects the voice of the profession," was the rating given it by one doctor.

The 1959 readership survey strongly substantiates the 1954 investigation. THE JOURNAL and THE FORUM have been shown to be even more acceptable to their readers. It is evident that their acceptance has mounted in the period between surveys.

Official medical publications are generally recognized as representing a cooperative endeavor between a profession and the ethical firms who advertise. The 1954 study, which also surveyed the buying power of the profession, established beyond question an osteopathic potential for pharmaceutical and medical suppliers. It placed the profession in a secure and commanding position in the market place. Four years later Taylor, Harkness and Lea, Inc., made an independent study of the prescribing, administering, and dispensing habits of osteopathic physicians. Their 1958 findings, reported in a brochure, resulted in the conclusion that "There is a reason to believe that practicing D.O.'s constitute a large market for drugs today and that their impor-

tance in the over-all picture of pharmaceutical marketing will continue to grow."

The advertising pages of THE JOURNAL and of THE FORUM now constitute a pharmaceutical, medical, and surgical supply fair which thousands of doctors attend each month. And they do attend, as is attested in the brochure just off the press, *Survey of Osteopathic Publications.*

This report, as compiled by Roosevelt University, is contained in eight pages attractively printed on heavy stock and in color. Although intended principally for ethical pharmaceutical houses, a limited number are available for free distribution to members of the Association. Write for your copy today. Address: The American Osteopathic Association, Attention: Walter Suberg, Business Manager, 212 East Ohio Street, Chicago 11, Illinois.

Abraham Flexner

On September 21 at the age of 92, Abraham Flexner died at his home in suburban Falls Church, Virginia. Two years ago, in recognition of his ninetieth birthday, THE JOURNAL echoed an accepted fact when it stated that Dr. Flexner had "had a greater impact on medical education in America than any other person or agency—even to the degree that he not only revolutionized medical standards but profoundly affected professional standards in other fields." The editorial made reference to the debt of gratitude osteopathy owed to Dr. Flexner for his prescience that schools of osteopathy were schools of medicine.*

Flexner's report, "Medical Education in the United States and Canada" (1910), now a classic of educational research, classified alike schools of allopathy, homeopathy, electicism, and osteopathy as schools of medicine. All of these he severely castigated, excepting a few schools of medicine that met the medical standards that he held adequate. Although osteopathy's early able and imaginative leaders did not accept the categorization, it spurred them to back research and education to the profession's limit.

Space does not permit a review of Dr. Flexner's continuing achievements. Even at the age of 85, he published "Funds and Foundations," there to bring his knowledge to bear upon a review of philanthropic support of education. For further details of the life of a man who made Thomas Carlyle's motto, "I burn that I may be of use," his own, the reader is referred to the May 1957 issue of THE JOURNAL and its editorial, Imaginative Vision and Organizational Capacity.

Abraham Flexner was representative of America at its best. In an editorial comment on September 22 *The New York Times* referred to him as "the son of immigrant parents, reared in poverty and hardship [who] was instrumental in influencing philanthropic foundations to endow more than half a billion dollars to American education and in opening doors to research and experiment." Said *The Times,* "No other American of his time has contributed more to the welfare of his country and of humanity in general."

It took imaginative vision in 1910 for a scientist and a doctor of medicine to see the role that osteopathy was to play as a healing art profession.

*First cited by Dr. Wilbur C. Cole in Development of Osteopathic Research and Education, thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts, Northeast Missouri State Teachers College, Kirksville, Missouri, 1954.

Medical writing programs

The Committee on A.O.A. Publications has under study ways and means for establishing a training program for D.O.'s in medical writing. The field is virgin, whether it be related to the technics of writing and editing carried out in a specifically oriented course in one or more of our six professional colleges, or be training designed for the graduate physician. Within the new A.O.A. year, the Committee hopes to have a program outlined and to be ready to put into effect some one of its features. The Committee wishes to outline a broad program plan that necessarily must be developed in steps and yet one that is not too ambitious to hinder its step-by-step realization.

Such a program in any of its aspects must be based on *language usage at the scholarly level,* and its approach must be that of modern linguistics, as opposed to older and antiquated technics of grammarianism. As soon as the broad details of such programs are approved, THE JOURNAL will apprize its readers.

In the meantime THE JOURNAL calls attention to two medical writing programs held in 1959. They were open to all interested persons who could qualify—whether lay medical writers or graduate physicians. Aside from basic education (usually represented by a bachelor's degree from an accredited college, or that plus a professional degree), the chief requisite for any individual interested in such a program is one of motivation: an awareness of his writing faults, and a willingness to take time out to correct them and improve his skill. Writing is work, hard work; like any achievement it becomes possible only by highly disciplined effort continuously pursued.

The Second Annual Medical Writers Institute was held on June 15 to 17, at the Rensselaer Polytechnic Institute, Troy, New York. The Institute, under the direction of Professor Jay R. Gould of R.P.I., has proved so successful that the third session, planned for next year, will last for 5 days instead of 3, as was previously the case.

Among the participants were representatives of the dental and nursing professions, quite a few members of the American Medical Writers' Association, and writers from some of the leading drug manufacturers. Barbara E. Peterson, medical manuscript editor of THE JOURNAL staff, was a participant.

The program was equally divided between lectures and workshop sessions. Dr. Charles E. Lyght,

of Merck Sharp & Dohme, spoke on the writing of instructions and circulars; Dr. Walter Kahoe, Editor-in-Chief of J. B. Lippincott Company, discussed editors' and authors' problems; Dr. Granville Larimore, Deputy Commissioner of New York State Department of Health, spoke on adapting medical material for lay readers; and Mr. John Kallir spoke on medical advertising. The staff of Rensselaer Polytechnic Institute; notably, Professors Jay Gould, Robert Sencer, and Lionel Wyle, gave practical advice on the semantics of medical communication. Dr. Joseph Franklin Montague, distinguished physician and author, served as coordinator of the sessions. Interested readers should watch for specific announcements of the 1960 Institute.

As the October issue of THE JOURNAL goes to press, the annual meeting of the thoroughly established American Medical Writers' Association is in annual session at the Chase Hotel in St. Louis, Missouri. A fine program has been arranged. Presiding over the meeting is Dr. Morris Fishbein, 1959 president of A.M.W.A. and a former editor of the American Medical Association.

The Writers' Association and the Institute are only two groups at the national level attempting to do something tangible about the problem of establishing medical writing programs. They are both commanding the attention of persons seriously concerned about the need for such training.

The American Osteopathic Association is to be commended for its study of possible training programs for osteopathic students and graduate physicians. The profession of medicine has long wrestled with the problem of medical writing but thus far has accomplished nothing. Our smaller profession should find it simpler at least to find the way to make a constructive beginning.

People who work

Our national economy and our security rest largely upon the well-being and productivity of our approximately 70 million workers. Annual wage losses of these workers because of illness now total six billion dollars, representing a loss of 500 million mandays a year. These illnesses, nine times out of ten, are the result of off-the-job rather than on-the-job causes.

There can be no question that, increasingly, physicians will be called upon to meet the challenges of occupational health as services in this field are more and more in demand, not only by large industrial firms but by numerous small companies as well. Actually, it is the small and medium-sized companies which employ approximately two thirds of our total labor force. Therein doctors of osteopathy and osteopathic hospitals especially can be of great value—if they prepare themselves to meet the needs of their communities.

Copies of *The Health of People Who Work*, a complete handbook for all persons and institutions having to do with industrial health, will soon be available from the National Health Council, 1790 Broadway, New York 19, N.Y. The text is based on the papers and discussions presented at the 1959 National Health Forum and represents the contributions of more than 200 experts who participated.

The Health of People Who Work will be found to contain concise and practical operating blueprints for occupational health programs. There are few physicians who do not need guidance on how to start a program of industrial health; how to staff it; how to control its cost; and how to tap community health resources for its support. The handbook will be found invaluable to osteopathic institutions rendering medical services to workers. It is the only *single* source that contains answers to all possible questions that can arise in the field of occupational health. The 1959 N.H.C. Forum, as has been typical of its recent meetings, studied this fully, as another manifest trend in health needs and medical care. The handbook is its fruitage.

The health of people who work has been the great single factor in the growth of third party medicine. The two are indissoluably linked. Organized osteopathy is becoming sharply aware of the significance of these trends—witness the appointment of an A.O.A. Committee on Third Party Medicine. The social, economic, and political trends that are revolutionizing medicine all are implicit in *The Health of People Who Work*.

These trends are also set forth in the 1959 report of the Committee on Third Party Medicine, as presented to the A.O.A. Board and House in Chicago, July 1959, at the profession's Sixty-First Annual Convention. A careful study of Dr. Classen's report, found on pages 133-138 of this issue of THE JOURNAL, and N.H.C.'s new handbook, will furnish our profession with a basic philosophy, specific information, and a program for action. Our readers are urged to give these matters the attention they deserve.

The question of third party medicine revolves around getting full value for the dollars invested in health care; questions that deal with the health of people who work also deal with quality care for workers. These two groups of questions are not separable, and are on the agenda for study by the osteopathic profession.

Correction

► In the article, "The Electrolyte Ring," by Milton Kunin, D.O., which was published in the August 1959 JOURNAL, the word "alkalosis" occurred by mistake in the first line of the legend for Figure 10 on p. 769. The word should have been "acidosis." We regret the error.

American Osteopathic Association 1959-60 Officers-Trustees-Chairmen

OFFICERS

President	Galen S. Young
President-Elect	Roy J. Harvey
Past Presidents	George W. Northup
	Carl E. Morrison
First Vice President	Wesley B. Larsen
Second Vice President	J. Mancil Fish
Third Vice President	James H. McCormick
Executive Secretary	True B. Eveleth
Business Manager	Walter A. Suberg
Treasurer	Kenneth L. Ettenson
Editor	Raymond P. Keesecker
Speaker, House of Delegates	Charles W. Sauter, II
Vice Speaker, House of Delegates	Philip E. Haviland

TRUSTEES

Robert A. Galbraith, John W. Hayes, Eugene D. Mosier, Ira C. Rumney, William B. Strong (Terms expire 1960); Robert D. Anderson, Lydia T. Jordan, Wallace M. Pearson, Herbert L. Sanders, Campbell A. Ward (Terms expire 1961); J. Scott Heatherington, Russell M. Husted, Charles L. Naylor, Dominic Raffa, J. Edward Sommers (Terms expire 1962)

Dr. Roy J. Harvey

EXECUTIVE COMMITTEE

Galen S. Young	Roy J. Harvey	Ira C. Rumney
George W. Northup	Wesley B. Larsen	Russell M. Husted

CHAIRMEN

Department of Professional Affairs, *Ira C. Rumney*
- Bureau of Professional Education, *Clyde C. Henry*
  - *Committees:*
    - Colleges, *George W. Northup*
    - Hospitals, *Vincent P. Carroll*
    - Accreditation of Postgraduate Training, *William Baldwin, Jr.*
    - Clinical Study, *Allan A. Eggleston*
    - Osteopathic Progress Fund, *Charles L. Naylor*
    - Student Loan Fund, *Robert N. Evans*
    - Advisory Board for Osteopathic Specialists, *Thomas J. Meyers*
- Bureau of Research, *Robert A. Galbraith*
- Bureau of Organizational Affairs, *Wallace M. Pearson*
  - *Committees:*
    - Distinguished Service Certificates, *Lydia T. Jordan*
    - Ethics, *Wesley B. Larsen*
    - Membership, *John W. Hayes*
    - Veterans Affairs, *Robert E. Morgan*
    - Constitution and By-laws, *J. Scott Heatherington*
    - A.O.A. Publications, *Arnold Melnick*
- Bureau of Conventions, *True B. Eveleth*
  - *Committees:*
    - Program, *Raymond L. Ruberg*
    - Convention City, *Campbell A. Ward*
    - A. T. Still Memorial Lecture, *Wallace M. Pearson*
    - Convention Scientific Exhibit, *Wilbur V. Cole*

Department of Public Affairs, *Russell M. Husted*
- Bureau of Public Education on Health, *Eugene D. Mosier*
- Bureau of Public and Industrial Health, *Robert D. Anderson*
  - *Committees:*
    - Third Party Medicine, *Theodore F. Classen*

Department of Business Affairs, *Roy J. Harvey*
- Bureau of Finance, *Carl E. Morrison*
- Bureau of Insurance, *John W. Mulford*

Council on Federal Health Programs, *Chester D. Swope*

Council on Development, *William B. Strong*

Ad Hoc Committees
- Conference, *Carl E. Morrison*
- Format and Scheduling of National Conventions, *Campbell A. Ward*
- Mead Johnson Grants, *John W. Mulford*
- Manual of Procedure (Joint House-Board), *Herbert L. Sanders*
- A.O.A. Organizational Structure, *Campbell A. Ward*
- Council on Emergency Medical Services, *Chester D. Swope*
- Council on Accreditation (to be appointed)

The osteopathic physician and third party medicine 133

Annual reports—Department of Professional Affairs 139

Headquarters Activities 148

A.O.A. ACTIVITIES

A Message from the President of the American Osteopathic Association

▶ The sixty-third Convention of the American Osteopathic Association, now history, proved in many ways to be epoch-making. For the first time since the origin of the osteopathic profession, a pharmaceutical house has made a valuable contribution in the form of closed-circuit television. Members who did not attend really missed a worth-while experience. The entire program, as compiled by Dr. William Baldwin, Jr., of York, Pennsylvania, was one of the outstanding programs the profession has had, an opinion generally shared by attendants.

This is my first opportunity, in the space set aside for the President, to express appreciation for a job well done. The arrangement of the program and the caliber of the speakers was informative and inspiring. Physicians in attendance were privileged to hear about and observe the latest scientific developments of the medical world.

The theme of the Convention, "Unfolding Horizons in Osteopathic Medicine," was indeed challenging. It was highlighted by Dr. Irvin M. Korr in his Keynote Address, and by Dr. Otterbein Dressler in the Andrew Taylor Still Memorial Lecture. Dr. Korr, the first non-osteopathic person to be chosen as keynote speaker, was indeed a wise selection. His message was an inspiring one.

It often happens, I believe, that those of us who are physicians become so busily engaged in practice that we do not behold the beauty of the trees because of the forest. It appears necessary, at times, for someone other than a D.O. to help us count our blessings. We become so engrossed in our daily activities that we lose sight of the scientific, biologic, physiologic, and sociologic truths upon which our profession is founded. This can serve as a divisive force that can ultimately cause some members to disregard these truisms, and become a superior sort of machine rather than an expert mechanic. Advisedly, for your consideration, we present the last word. These are but a few highlights of the Convention, although they do assume a position of major importance.

One of our problems has been a lack of rapport between the press and the Association. It appears that journalists have for many years had a wrong impression regarding the policy of the A.O.A. They have felt, in particular, that the profession has been very literally waiting to be

absorbed by the greater (numerically) of the two major healing arts professions. In the thought that this impression might in part have arisen from the practice of the House of Delegates of holding executive or closed sessions to try to solve some of its problems, it was decided this year to keep the House open at all times. Members of the press, or other interested groups, members of the profession, and convention guests were free at any time to observe the policy-making group at work.

Since policy is invested and established in the House of Delegates of the American Osteopathic Association, it seemed that the misapprehensions of some persons could easily be misinterpreted. I am far more concerned that at all times accurate and proper statements be made. Lack of information is a problem which must be overcome. Furthermore, the climate now seems ready for a restatement of policy. Purpose and policy re-established, our own agencies will then be prepared to act in an advisory capacity to groups concerned with our situation.

It is necessary that enthusiasm, interest, and the proper climate be in readiness for the adoption of resolutions that would offer the dictum that we are a complete school of medicine and intend to remain a complete school of medicine, in order that people of the United States and the world may receive better health care.

The overwhelming majority that supported the Michigan resolution indicated a reaffirmation of and dedication to a commitment of utmost importance in the promotion of the osteopathic profession. As your chief executive servant, I am convinced that the profession has reached a state of maturity in which outside forces that may threaten will not be nearly as harmful as divisive forces within. These are due, in many instances, to a lack of information, over-enthusiasm, or immaturity of thought. If these efforts could be expended in the solution of problems rather than in the dilution and dissipation of our forces, they could unify the profession. If this can be accomplished, a great contribution will have been made; our forces will be solidified, and our problems will be more courageously managed.

Let us all plan to cooperate to the best of our abilities for the preservation of the health of mankind.

Galen S. Young D.O.

2300 Providence Avenue, Chester, Pennsylvania

As President of the American Osteopathic Association, Dr. Galen S. Young is scheduled to attend these conventions and meetings:

Missouri Association of Osteopathic Physicians and Surgeons, St. Louis	October 14-15
New York State Osteopathic Society, New York City	October 17
North Carolina Osteopathic Society, Asheville	October 23
American College of Osteopathic Surgeons, Los Angeles	October 25-29
Oklahoma Osteopathic Association, Tulsa	November 3-5
American College of General Practitioners in Osteopathic Medicine and Surgery, Des Moines	November 8-10
National Osteopathic Guild Association, Chicago	November 13-14

The osteopathic physician and third party medicine

The first report of the ad hoc Committee on Third Party Medicine is of such value as to merit this almost complete publication. Appointed by the Board of Trustees last January to evaluate the part of the osteopathic physician in this matter, the Committee holds third party medicine to be a major innovation in health economics. Its impact on the doctor-patient relationship cannot be overemphasized. Information in this report is of vital importance to every practicing doctor of osteopathy.—The Editor.

By Theodore F. Classen, D.O.

▶ Traditionally, medical and hospital care were provided through individual arrangements made among doctor, patient, and hospital. The patient was individually obligated to pay for such services; the doctor and hospital individually held themselves forth as available to provide them. Throughout this report the terms "medical care" and "hospital care" will be used. At present, health plans in general provide separate arrangements or contracts for the two kinds of care. In the United States today, comprehensive hospital care is provided to a much greater extent than is comprehensive medical care.

The third party in medicine is some person, organization, or corporation other than the doctor, hospital, or patient involved in the financial or professional arrangements by which health care is provided. Such an agency may be obligated to pay in full or part, as indemnity for a patient, his medical or hospital costs; may have assumed, on a prepaid payment basis, the responsibility for furnishing in full or part the actual medical or hospital services; or may be actively engaged in arranging or organizing either for the payment or provision of medical or hospital care, but is not necessarily involved in either the payments or the furnishing of service.

These arrangements may or may not include all of the members of a person's family or persons for whom he is obligated to provide health care. Similarly, under prepaid plans the person may pay in whole or part for health services, or through a labor contract may have them taken care of by an employer organization. In the United States at the present time there is such a multitude of diverse and at times duplicating health care plans that it is difficult to define or list them.

Types of Health Plans • Health plans fall into two principal categories. These are:

1. Governmental health plans—The various types of federal, state, and local governmental health plans are generally not considered voluntary. They may include plans of the United States Public Health Service, Veterans Administration, armed forces, Medicare, and those of the state and local governments, many of which receive grants-in-aid or financial contributions from the federal government.

Most voluntary health plans recognize the existence of governmental plans and may provide that their coverage not apply if a person is eligible for care under a government program. The state workmen's compensation or employee compensation plans are the ones most frequently referred to in this context.

2. Voluntary health plans—Under this classification are included:

a. Private insurance programs: insurance company policies, Blue Cross and Blue Shield, beneficial organizations, and employee benefit associations. Of this group the private insurance companies and Blue Cross-Blue Shield organizations are the largest and most important. According to various estimates, of the 120 million persons in the United States covered by insurance, the greatest percentage are under these plans.

b. Industrial programs: employers, workmen's compensation, labor organizations, and employee programs. These may or may not be provided through insurance. The industrial-employee programs are nearly all group plans, and coverage generally ceases upon termination of employment, or within a short period thereafter.

c. Miscellaneous plans: in-plant health services, student health services, co-operative plans, occupational health programs, and the very important health plans of such organizations as United Mine Workers, Kaiser Foundation, Health Insurance Plan of Greater New York, and related organizations belonging to the Group Health Federation of America. Plans utilizing closed panels or groups of physicians fall within this classification. It is with regard to this type of health plan that the greatest amount of controversy has existed since World War II. There are approximately 5 million persons covered by the some 150 prepaid group practice plans.

Health coverage • 123 million Americans have some sort of voluntary health insurance. Between 1946 and 1956, 80 million persons were enrolled in voluntary care plans. By and large, coverage is now considered inadequate, both in regard to the number of persons covered and the extent of coverage. It must, therefore, be recognized that the full force of third party medicine has not yet been felt. Even though prepayment plans provide 4 billion dollars annually in medical and hospital costs, they still provide only a small part of total cost of health care.

"The initial study of this Committee reveals that the social, economic, and political trends of the country are affecting sharply the osteopathic profession and its institutions. It is imperative that each physician evaluate these trends, and understand the virtual reorganization of the economics of medical and hospital care," says Dr. Classen in the accompanying report.

Objectives • Attendance of representatives of this Committee at such meetings as the National Health Forum in Chicago, the Health Insurance Association of America in Philadelphia, and the Group Health Institute in New York City emphasized these facts: The objectives of all health plans appear to be comprehensive coverage for all costs of medical and hospital care, or for comprehensive medical and hospital services. Unions contend that present coverage gives a worker only about one-third of the costs for his family. Most prepayment plans now provide for a greater percentage of hospital expenses than for medical expenses. It is recognized that extension of coverage for all medical expenses involves more problems than full coverage for hospital care. Present restrictions and limitations on medical services and hospital coverage are recognized as antiquated and unrealistic. The major effort is to eliminate them to permit comprehensive and high quality medical and hospital services, or full coverage of costs. Coverage should include tuberculosis, mental disease, diagnosis, in-patient and out-patient service, and other such care as is limited under existing plans.

Major influences • At present these are the principal factors in pattern of health coverage:

1. Health statistics—The National Health Survey of the United States Public Health Service and other studies by both government and voluntary organizations are determining the type, character, and quality of present medical care. Detailed statistics on the use of services, the frequency, costs, etc., are becoming increasingly available. They provide such information as patient days, types of cases, use of drugs and surgery, and pathology present. These statistics are influencing sharply the thinking of third party organizations, and are repeatedly referred to by them as evidence of the need for tighter controls on medical and hospital services, and for continuing effort to improve the quality of care.

2. Quality and standards—The financing of care used to command major attention in third party medical groups. This is no longer true. Nearly all groups now admit that "the economy" is going to pay for full health coverage; controversies over *who* pays are no longer sharply defined. Health statistics have brought thinkers around to the major considerations of the day: quality and standards. These influence what the supplier of funds gets for his dollar—whether he be employer, the insurance company, labor union, or the individual. In 1958, the United Mine Workers Health Fund program administered standards for both hospitals and doctors. This not only brought about a 2 per cent decrease in expenditures, but also an increase in care. This was contrary to a national trend toward increased costs for both medical and hospital care under nearly all other plans. Quality and use of standards are being studied on all fronts, and comprise the major movement in medicine today.

Two standards repeatedly encountered in discussions of health plans are those of specialty boards or colleges, both the medical and osteopathic, and of the hospital accreditation programs of the Joint Commission on Accreditation of Hospitals. These standards and related hospital standards of the American Osteopathic Association are recommended by many third party groups as the minimum for acceptable care. They are used because they are practical levels of competency and qualification, and relieve the organizations of preliminary individual evaluations of doctors or hospitals. Doctors in many closed panel plans are all either certified or in the process of qualifying, and all hospitals are accredited by the Joint Commission on Accreditation of Hospitals.

Closed panel plans appear to be a bar to osteopathic participation until such time as better relationships are established on an organizational basis between the American Medical Association and the American Osteopathic Association. All physicians and surgeons participating in closed panel programs (there are 500 M.D.s alone employed by the Kaiser Foundation Plan) are doctors of medicine.

At this time it is essential that all hospitals in which D.O.s practice be registered with the A.O.A. Bureau of Hospitals. Of some 400 osteopathic hospitals, about one-half are registered at the present time. To maintain the standards comparable to those being met by medical doctors participating in limited participation plans, more D.O.s must secure certification in the specialties. These demands of third party medical groups cannot be avoided. Nothing less than compliance with standards similar to those met by medical doctors and hospitals will be acceptable.

Under insurance company programs for industries, in particular, in which a basic medical and hospital insurance program of the indemnity type has had superimposed upon it a major medical expense insurance program with a 20% or 25% deductible provision over a minimum $50.00 deductible amount, insurance companies are now concerned over the quality of care received by insured persons. Formerly, when insurance companies were obligated only to pay an indemnity of a set amount for care rendered, they were not, by and large, concerned with the total cost or the quality of care. The advent of comprehensive major medical expense plans, with limits up to $20,000, has raised new problems. Where osteopathic care is con-

cerned, many companies have expressed a desire to limit care to that provided by D.O.s who are A.O.A. or divisional society members, in A.O.A. registered or approved hospitals. They feel that such requirements are minimal.

Related current factors • The following 15 points cover matters of immediate significance:

1. Overuse—Statistics indicate that in many areas there has been an overuse of hospital and medical care. Abuses may lie in surgery, use of durgs, and unnecessary hospitalizations. Restrictions and limitations of coverage in insurance encourage some such overuse.

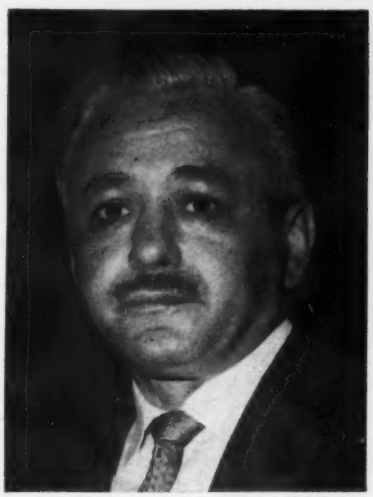
2. Restrictions—Removal of restrictions on the coverage of persons who are older, have a specific disease, are unemployed, or are not presently covered will permit proper planning for health services. Inadequacy of present coverage is an important factor in preventing better organization of health care.

3. Low-Income Groups—This group has been a major factor in the increased use of health services under industry-wide health insurance. Wealthy persons who were formerly the greatest users of medical care now find covered low-income groups purchasing equivalent care. Insured persons, statistics show, use health services more frequently than non-insured persons.

4. "Reasonable," "justifiable," "adequate"—These terms are used by third parties in classifying the type of care provided. The terms help to indicate effectiveness of, need for, quality of, and the relation of care to the required standard. Care not up to standard will not be covered or furnished under most plans once it is apparent that low quality is involved.

5. Union and employer clinics and controlled plans—Such clinics give the third parties standards and statistics and guide them in determining costs and quality of care. Some of these clinics have particularly favorable statistics. The Health Insurance Plan of Greater New York, a prepaid medical plan covering approximately 750,000 persons in that area, provides complete medical care and requires members to procure hospitalization through Blue Cross.

The hospitalization experience of two populations having the same hospital insurance coverage but different coverage for medical care, was studied. The two populations were those of the H.I.P. and the United Medical Service (Blue Shield) in New York City. It was found that the annual hospital admission rate for the H.I.P. population was 77.4 per 1,000 as compared to 94.8 for the Blue Shield group. It was also found that the duration of stay, expressed as the number of days per 100 population per year, was 55.8 for the H.I.P., and 68.8 for Blue Shield group. There was little difference in the average duration of stay per admission. For a further example, 95 per cent of all infants covered under the H.I.P. program were immunized against whooping cough, diphtheria, tetanus, and smallpox in their first year of life.



Dr. Classen

The 32 medical groups utilized by H.I.P. have over 1,000 physicians; approximately one-half are family physicians and the other half specialists. These doctors have over 10 million dollars invested in medical centers. Few of the doctors, including the family physicians, have had less than two years of residency or fellowship training following internship.

6. Free choice of physician—Third party groups say that free choice never existed completely, and in many areas not at all. Workmen's compensation, railroad plans, and staff hospital care have traditionally restricted free choice. A.M.A. now refers to "reasonable choice of physician." Third party groups say that "free choice" may lead to low level care. Reasonably free choice, impartiality, and competent care are the present criteria. At its June 1959 meeting, the A.M.A. adopted the Report of the Commission on Medical Care Plans (published in a Special Edition of the J.A.M.A., January 17, 1959) which altered A.M.A. policy to approve of free choice of physicians or medical plans, thus removing its long-standing opposition to closed panel plans. This action will be an incentive to the development and expansion of closed panel plans.

7. Comprehensive medical and hospital service benefits—This type of coverage is the objective of third parties. They say that it is the only practical answer and the ultimate objective; that one comprehensive policy providing full service or indemnity benefits is the solution, to be preferred to present duplication and overlapping of policies. Cash indemnity is frequently said to be on the way out. Insurance companies are not in agreement with this, but seem agreed that full cash indemnity must be achieved. Expansion of major medical expense insurance programs is directed at this objective and appears to be making substantial progress.

8. Financing—The financing of comprehensive care is a matter of social, economic, and political policy. There is no one answer as yet acceptable to all groups. The public will ultimately decide. The present duplication and overlapping of health insurance coverage is unsatisfactory. Cash indemnity is said to be useable in regard to inanimate property, one's car, house, etc., but not to health insurance or the medical needs of the country by groups seeking full service benefits through panel or closed systems of practice.

9. In-plant services—There appears to be agreement that increased in-plant services are needed to improve efficiency and to help prevent epidemic diseases. Greater use of preventive measures in industry and public health is needed

Your future is involved—

What effect is the present trend in medical economics to have upon the quality of medical care? What roles will be played by labor, industry, insurance companies, the government? What effect will third party medicine have upon the individual? On his historic, independent relationship to his physician? How will osteopathic physicians and their hospitals be affected?

Where does the total responsibility for medical care rest? These are some of the questions discussed in this article. Read it. Your future is involved.

and indicated. Attention is called to the A.O.A. publication, "Industrial Health Program—Planning and Organization."

10. Compensable injury—workmen's compensation—These may already be archaic terms. Many employees get greater health benefits and disability pay under voluntary health insurance than under workmen's compensation. Disability benefits under the Social Security Act may in some areas exceed benefits under workmen's compensation. The worker selects whichever benefits are greatest. Such situations indicate the overlapping and over-financing of present benefits.

11. Collective bargaining—Collective bargaining between employer and workers has been partly responsible for the development of a conglomeration of health plans and duplication of benefits. Since 1939, it has brought about coverage of dependents, and other new features of health insurance. Labor organizations say, however, that health is a necessity, and seriously question whether it should and can feasibly continue to be a matter of collective bargaining. Under collective bargaining the distinction between occupational health and general health is being gradually eliminated. Voluntary health plans have provided coverage beyond the most liberal interpretation of occupational health programs. Both employer and employee are looking beyond collective bargaining.

12. Growth of health plans—As now organized, can voluntary health insurance grow any further without encountering prohibitive costs, yet at the same time settle the varied interests of labor, doctors, hospitals, and other interested groups? Can the duplications, restrictions, and inequities be eliminated? The growth of voluntary health insurance will depend in part upon the answers to these questions. Present diverse methods of payments may make almost impossible any well organized plan.

13. Fees—Full service benefits would, of course, eliminate fee schedules as now known, which permit the practice of assessing additional charges. The present concern of many persons is that doctors consider the presence or absence of health insurance in assessing fees. All third parties are agreed that the presence of health insurance cannot be used as an economic factor in determining "capacity" or "ability" to pay. To use it in this manner is to defeat its purpose. The insurance dollar, it is said, must purchase the same amount of health services as the private or non-insurance dollar.

14. Major medical expense insurance—The deductible feature of major medical expense insurance has varying amounts, generally somewhere from $25.00 to $250.00. This is in addition to the limitation that the insured person receives reimbursement only for 70 to 80 per cent of medical expense over the deductible amount. This has made this coverage subject to criticism. This kind of insurance has also occasioned considerable criticism of medical or hospital expenses submitted. Since this coverage does not include a fee schedule, insurance companies have commenced to check to determine whether the fees are reasonable.

The deductible feature, in addition to only partial coverage, can mean that this insurance cannot satisfactorily provide the coverage needed for low income groups. Available from Central Office is the article, "Major Medical Expense Insurance," prepared by the Bureau to supply detailed information on problems that arise under this kind of insurance.

15. Pennsylvania Insurance Commissioner and Governor's Hospital Study Commission of Pennsylvania—Few reports on the subject of third party medicine fail to comment on the recent studies or adjudictions made by the Insurance Commissioners or Departments on premiums and expenses of Blue Cross and Blue Shield in hearings held in Philadelphia, Baltimore, and New York City. These studies all involve investigations of hospital and medical services, expenses, and administration.

One of the most immediate results appears to be the establishment of hospital admission committees to eliminate over-utilization.

Another aspect is closer attention to hospital financing and expansion plans. The scope of the Governor's Hospital Study Commission of Pennsylvania indicates the depth to which public state bodies are going in an attempt to legislate new regulatory provisions regarding medical and hospital costs. According to an article in the *Journal of the American Hospital Association* (April 1, 1959, pp. 30-31) this Commission, which will cost an estimated $300,000, will study the following areas:

a. Organization of the physical facilities of hospitals: elimination of duplication; efficient organization; study of specialized facilities for long-stay or convalescent patients; and construction of additional hospital facilities.

b. Utilization of hospital facilities: length of stays and admission practices; clinic and outpatient methods of caring for the sick; ways of providing diagnostic services outside of hospitals; and the extended use of visiting nursing programs.

c. Hospital costs: more efficient management of hospitals; more economical use of hospital

facilities involving development of facilities for specialized patient groups such as the aged and maternity patients; and economical methods of management such as joint purchasing and sharing equipment.

d. Financing hospital care: study into the Blue Cross system of financing medical care including the manner in which hospitals are reimbursed by Blue Cross; a study of charges made by hospitals for their services; and a study of public subsidies for defraying the cost of free care.

Effect of plans on osteopathic doctors and hospitals • The development of voluntary health insurance plans of all types has already had important effects upon the osteopathic profession and its institutions. When members of the profession are free to participate in such plans on the same basis as other physicians, no problems arise. When, however, plans have commenced to establish standards for care, and in particular standards relating to quality of care, some doctors of medicine and some of osteopathy have been disqualified from providing services.

In the same way, when plans require that hospitals meet certain hospital standards, hospitals of both professions that do not meet the standards may not qualify for reimbursement for services provided. The effects may be listed as follows:

1. The complete exclusion of D.O.s and osteopathic hospitals from closed panel programs that restrict care to panel doctors and to hospitals in which the panel doctors practice. These plans are developing. It appears likely that they will not be organized nationally, but in local or regional areas, and probably will become a major factor in providing complete prepaid health service.

2. A limited exclusion of D.O.s and osteopathic hospitals occurs under such plans as the United Mine Workers Health and Welfare Retirement Program where care is by and large restricted to doctors who are certified in their specialties and to hospitals accredited by the Joint Commission on Accreditation of Hospitals.

It appears that osteopathic doctors and osteopathic hospitals may now provide care under a program of this type only in the absence of designated doctors or hospitals meeting the U.M.W. standards. The wide publicity and apparently favorable statistics achieved by U.M.W. in providing high quality care without increased costs appears to be encouraging other major unions to consider a similar program.

The action of the American Medical Association in June 1959 removing its opposition to such plans will further encourage their development. The establishment of favorable conditions under which the D.O.s and M.D.s may consult and practice together would be an important factor in increasing the likelihood of further participation of the osteopathic profession under such plans.

3. The Committee noted an increasing apprehension on the part of osteopathic doctors and hospitals over the trend of insurance companies and other organizations gradually to increase the requirements under which doctors or hospitals may provide care. The osteopathic profession can protect itself from such trends by placing greater emphasis on professional development, encouraging certification in all specialties in the various hospitals, requiring doctors of osteopathy to practice only in A.O.A. registered or approved hospitals, and in enforcing at both state and national levels high ethical standards.

The profession must realize that members who fail to improve the quality and scope of their practices by graduate education, including to a greater extent residency and other specialty training, will eventually be seriously restricted in the care they may provide under health plans.

Physicians in general practice, including doctors who limit their practices to manipulative or structural problems, must place equal emphasis upon diagnosis, preventive medical measures, clinical records, and must establish to the satisfaction of the health plans the efficacy and validity of their diagnostic and therapeutic measures. Provisions in health insurance policies in Michigan and certain other states have already placed restrictions upon reimbursement for this kind of medical care.

4. When doctors of osteopathy are disqualified or restricted under such plans, osteopathic hospitals will also suffer. By and large, there are more restrictions upon medical than upon hospital care plans. Nonetheless, the profession must recognize that its large investment in osteopathic institutions requires it to develop as above–indicated in order to prevent further restrictions. The profession as it is organized today is not as isolated as it was in the years preceding

For your information—

Available from Central Office without charge are these materials dealing with the osteopathic physician and health insurance:

Industrial Health Program–Planning and Organization (March 1959)

Major Medical Expense Insurance (December 1958)

Health Services and Facilities (November 1957)

In preparation: A statement of the position of the A.O.A. in regard to third party medicine (a revision of the 1951 statement on health insurance)

World War II from financial effects upon its institutions. Most osteopathic hospitals are heavily dependent for financial stability upon insurance payments.

Factors affecting the inclusion of osteopathic services • With approximately 75 per cent of the osteopathic physicians in the country located in 10 states, it is apparent that the distribution of the profession is not in accordance with the distribution of the population. The small number of D.O.s in many states makes it difficult for them to provide comprehensive services.

The unavailability of hospital facilities frequently prevents doctors from providing services under medical care plans. In other areas, the failure of existing osteopathic hospitals to qualify for A.O.A. registration or approval is a serious detriment. Approximately one-half of the 400 osteopathic hospitals in the United States participate under A.O.A. Bureau of Hospitals program. In many areas hospitals not registered may not participate in hospital care plans. This, in turn, often disqualifies osteopathic doctors.

Only in California has the profession adopted a Relative Value Study pertaining to professional services. This Relative Value Study was adopted by the California Osteopathic Association in 1957. The adoption of this program gives the members of the profession a scientific basis for determining fee schedules. It is believed that its adoption in all states would do much to eliminate confusion over billing procedures.

Adoption of a Relative Value Study by a divisional society provides health insurance groups with some basis for determining the reasonableness of fees. Considerable literature is available concerning Relative Value Studies and it is believed that the profession should become familiar with them.

As far as the Committee has been able to ascertain, the profession has few group practices that have the organization and facilities to qualify for participation in closed or limited panel plans. It is believed, therefore, that increased emphasis must be placed upon this type of professional organization. More and more frequently, groups of this type, with offices close to or connected with hospitals, are found in the medical profession. The teamwork of these doctors is to no small extent considered responsible, by third party medical groups, for increasing quality of medical care. Once again there is literature available from Central Office on the organization of group practices.

Present A.O.A. policy • The A.O.A. has adopted two statements in regard to health insurance. The first, adopted by the House of Delegates in 1949, was incorporated in a pamphlet released in 1951. It related largely to the then current issue of compulsory health insurance. It dealt with provisions broader than those of solely compulsory health insurance of a governmental character. Thus it does not today furnish a basic approach to current health problems. The booklet should be restudied, this Committee believes, and a revised booklet on health insurance should be ready for consideration by the 1960 Board and House.

The second statement, adopted in 1957, is known as "Health Service and Facilities," and deals with current health insurance problems. Available from Central Office, its contents should be in the thinking of every doctor of osteopathy in the country. This, along with the revised pamphlet on health insurance, will provide historical and current information on insurance developments. Both booklets evidence the awareness of organized osteopathy of trends and innovations in medical care.

Conclusion • The initial study of the Committee on Third Party Medicine reveals that the social, economic, and political trends of the country are affecting the development of the osteopathic profession and its institutions. It is imperative that the profession evaluate today's virtual reorganization of the economics of medical and hospital care. No one report could emphasize too strongly the need for continued study and re-evaluation. It is important that divisional societies take this matter under consideration, and keep the A.O.A. advised concerning the situation in their states.

Recommendations (Approved) • 1. That the "Health Insurance" booklet of 1951 be studied by this Committee and that a revised edition be submitted to the Board of Trustees in July, 1960 at the latest.

2. That each divisional society establish a Health Insurance Committee having as its jurisdiction such matters as developments in regard to third party medicine, problems arising for the osteopathic profession under health insurance plans, the performance of grievance arbitrations between doctors, patients, and health insurance organizations in their own states, and the care of the aged.

3. That each divisional society adopt a Relative Value Study to guide its members.

4. That the Committee on Third Party Medicine be continued and that it be directed to continue its study during the forthcoming year.

5 (Added). That the functions of the Committee on Third Party Medicine be absorbed by the Bureau of Public and Industrial Health with direction that a report be given to the Board and House at each regular session.

A.O.A. meetings in Central Office

The following meetings of A.O.A. agencies will be held in Central Office during late October and November:

Committee on Hospitals	Oct. 30-Nov. 4
Osteopathic Foundation Executive Committee	Oct. 31
Council on Development	Nov. 1
Committee on Membership	Nov. 12

Annual Reports—Department of Professional Affairs

▶ Annual reports of bureaus and committees of the Department of Professional Affairs of the American Osteopathic Association for the fiscal year 1958-59 are printed here. They were first presented to the House of Delegates and Board of Trustees during the 63rd Annual Convention held in the Palmer House in Chicago July 12-17.

The reports of the administrative officers and of ad hoc committees appeared in THE JOURNAL for September; reports of the Department of Public Affairs and the Council on Development will appear in November.

Robert B. Thomas, D.O.
Chairman

Bureau of Professional Education and Colleges

▶ The studies and experiences of the Bureau of Professional Education and Colleges during the past year indicate the continuing efficiency and healthy growth of our educational processes. They also show, however, that this efficiency can be impaired and growth retarded if increasing financial costs are not met through the cooperative efforts of the profession, government, and society in general.

At the professional level, it is heartening to note the number of divisional societies that have adopted the program of support-through-dues. In addition, the number of societies that are considering participation in the program augurs well for the future.

Bureau meeting • One regular meeting of the Bureau was held during the year. These matters were considered, and these suggestions developed:

1. Osteopathic education abroad: That the Bureau clarify the terms "approval" and "accreditation" with the British Osteopathic Association, as these terms apply to colleges of osteopathy in the United States.

2. Exchange of staff personnel between colleges and hospitals: The following matter was referred to the Bureau, regarding Item 38, of the 1955 edition of the Manual of Procedure of the A.O.A.: "Since the exchange of staff personnel between colleges and hospitals is inevitable, contemplated exchange of personnel either by the institution or the person should be carried out in the following manner: The approach of one institution to another relative to the acquiring of personnel, whether initiated by the institution or by the individual, should be made only through the chief administrator. The removal of staff personnel produces a serious problem for the college affected. (Board, Atlantic City, 1952, page 65; House, page 30)." It is the opinion of the Bureau that the present policy action is not enforceable and should be deleted from the Manual of Procedure.

3. Survey reports of college inspections: Copies of each survey report shall be distributed to the Board of Trustees at the start of its meeting and shall be collected for return to the Secretary of the Bureau following the report of the reference committee. Copies will continue to be sent to the President, President-Elect, Executive Secretary and the Chairman of the department.

4. Medical writing in curriculums of colleges: The following recommendation of the Board of Trustees was transmitted to the Bureau: "That the Bureau of Professional Education and Colleges be directed to encourage all osteopathic colleges to institute as a part of their regular curriculums a program in medical writing. Also, that progress reports on this directive be submitted to the Board of Trustees annually." The Bureau will study the matter with the help of the American Association of Osteopathic Colleges.

5. International College of Osteopathic Surgeons: That the Secretary of the Bureau be advised to write Dr. William L. Silverman, secretary, advising him that, after study by the Bureau, it was felt that the only thing which could be done in this case, unless they have new documents to submit, would be for them to petition the Board of Trustees for a rehearing of their situation, and upon direction of the Board of Trustees, this Bureau could rehear it.

6. Revision of "Standards:" That the present revision for the "Educational Standards for Osteopathic Colleges" be rewritten, not revised.

7. Conflicts of fellowships and other postgraduate programs: A reference committee of the Bureau had no report, on the basis that the Committee on Structure and Function of the Bureau has the matter of fellowship and postgraduate programs under consideration, and on the basis that the Bureau has accepted an interim method of accreditation of fellowship programs, as approved by the Board of Trustees. The chairman of the reference committee suggested that the committee be continued; if the Committee on Structure and Function of the Bureau of Professional Education cannot arrive at a satisfactory program, his committee could perhaps present a program which might be acceptable to the Bureau.

8. Constitution and By-Laws of the American Osteopathic College of Physical Medicine and Rehabilitation: That the Constitution and By-Laws of this specialty college be referred back to the college for acceptance of revisions suggested by the Bureau.

9. Committee on Student Loan Fund: That the Bureau concurred in the recommendation of the Committee on Student Loan Fund that the revised form, "Plan for the Student Loan Fund," which prescribes the rules under which the fund is administered, be approved, with the following change: Page L-2, last paragraph, line 9: Strike the words, "by the A.O.A. Treasurer and countersigned by the President and Executive Secretary," and substitute "as directed by the Board of Trustees of the A.O.A." This sentence as amended will then read: "Only bonded employees of the Association shall handle these funds and all checks drawn on the account shall be signed as directed by the Board of Trustees of the A.O.A."

Meetings of Seminar and Standard Nomenclature Committee • Two meetings of importance to osteopathic education were held on consecutive days in Chicago in mid-March. One was the second annual meeting of the Bureau's ad hoc Committee on Standard Nomenclature, the other the fourth annual Seminar on the Teaching of Osteopathic Theory and Practice.

Two statements that came out of these meetings are of vital importance. The first, prepared by the Committee on Nomenclature, was presented by its Chairman, W. Fraser Strachan; the second was presented by Seminar Chairman J. S. Denslow, director of research and professor of technic at the Kirksville College of Osteopathy and Surgery. Both are here quoted in full:

A Glossary for Use in the Study of Osteopathic Theory and Practice:

Osteopathy was founded in 1892. The first school was chartered "to improve our present system of surgery, obstetrics and the treatment of diseases generally." This school was similar to contemporary medical institutions with respect to both basic science and clinical curriculum; it was different with respect to emphasis on certain phenomena, particularly in regard to the ability of the human to resist and combat disease, the mechanisms involving the natural resources of the body, the high incidence and importance of derangements of the body framework and the effectiveness of manipulative methods in therapy.

In any period of time terms and definitions are limited by the knowledge available. At the end of the nineteenth century the biological and clinical sciences were in their infancy and there was little understanding and insight into the mechanisms of disease processes. There was no apparent conception of the importance of the study of the patient as a whole and the basic sciences were not yet fully identified as a vital part of clinical teaching. The advances to be made by the use of scientific methods were yet to come.

From its inception a basic premise of osteopathy has been that perfect structure is requisite for perfect function and that mechanical disorders in the structural framework of the body contribute to latent or to overt dysfunction or disease. This led, quite naturally, to the use of terms which dealt largely with anatomical relationships.

During the past 25 to 30 years, the tremendous advances in science have shifted attention in the biological and clinical fields from gross studies and understandings to highly complex functional mechanisms. This shift has made it evident that considerations of body mechanics of the musculoskeletal system, like considerations of all other major systems, must include all of the tissues which comprise the system and all of the mechanisms which relate and coordinate that system with all other organs and systems. Thus, the anatomical emphasis of the early days of osteopathy has yielded to the more complicated evaluations of the various components of the body framework, their relations with each other and their relations with other parts of the organism. With the advance in scientific knowledge the number of new findings and new concepts has grown so rapidly and in so many fields, that it is now impossible to interpret and to incorporate them in single, or even in multivolume texts. This knowledge, therefore, must now be sought in technical periodicals which, themselves, have pyramided in number and in scope. Hence, it appears necessary for the student, for the physician, for the teacher, and for the scientist of this and of related fields, to have an annotated and current glossary of terms which will assist in bringing into focus the important terms and phrases which otherwise are hidden, even lost, in the maze of modern biological and clinical knowledge. Such a glossary has been prepared. It is hoped that this glossary will be a living document and that as time goes on the outmoded and the obsolete will be dropped and the new will be made available to all who are interested directly or indirectly in this field.

A suggested basis for the discussion of methods used in describing procedures and objectives in osteopathic diagnosis and manipulative therapy, including the identification of outmoded or incorrect words and phrases:

One of the most important problems, possibly the most important problem, which has faced the osteopathic profession since its very beginning has been the simple fact that we have had no way to objectively describe or quantitate the body framework abnormalities which we have found and which we have treated successfully.

I think we can and should devote attention to this problem and I have taken the liberty of preparing the following statements in the hope that they will provide a basis for at least a start on these discussions.

A recognition of the fact that we needed a better means of describing our findings, our procedures, and our results was one of the basic reasons we started our research program many years ago. One of the primary aims of this program was to secure valid, scientific "laboratory" information concerning the characteristics of the osteopathic lesion which might be used in the clinical recognition and evaluation of this syndrome. Through the years, however, we have found that there are so many tissues involved in the osteopathic lesion and so many technical difficulties inherent in studies of their many different characteristics that it appears quite unlikely that we can develop, very soon at least, a test, or even a series of tests, to "diagnose," with objective "laboratory" procedures, the very complex disturbances involved in the osteopathic lesion. Indeed, it is now obvious that it will be necessary to have much more information concerning important normal mechanisms before a firm understanding regarding certain of the pathologies involved can be reached. For example, we originally thought that the hardness and rigidity of muscle in lesion areas was due to "spasm." We have now learned that muscle "spasm" may, or equally important, may not be present in these areas. However, it is now evident that we must have a much more com-

plete knowledge of the normal trophic mechanisms of muscle before we can identify and understand the factors which produce muscle hardness and rigidity in those situations where there is a palpable disturbance of muscle tone when muscle spasm is absent.

Fortunately, however, it has now been possible, by combining the observations of a number of related studies which have been made to develop a method of locating, quantitating and charting areas of osteopathic lesion in a manner that provides valid and usable information concerning this disturbance. This method is based on three observations, all of which have been well established by properly controlled studies under research conditions. These observations are as follows:

a. The osteopathic lesion has been shown to be characterized by segmentally related facilitation of the interneurons or the motoneurons (or both) of the spinal cord.

b. A direct correlation has been observed between the degree of facilitation and the degree of abnormality in the tone of segmentally related para-vertebral tissues.

c. Two physicians, using similar methods but examining patients independently, have found that they regularly reach and record similar conclusions as regards the location and severity of the osteopathic lesion.

One of our jobs is to re-examine the procedures which we actually use, diagnostically and therapeutically, and to attempt to find relatively simple ways to describe these procedures in terms that will be understandable and acceptable to our contemporaries in our profession and to non-osteopathic biologists and clinicians. In other words, we need to look at the methods we actually use in diagnosis and treatment and then we need to find the simplest, and the most accurate, description of these procedures.

As part of this effort, we also need to look at the words and the phrases that are currently used to describe our work and, wherever possible, to modify or eliminate those words or phrases which are outmoded or incorrect, or both. It is my hope that this effort, combined with the work of the Committee on Standard Nomenclature, might well start an entirely new chapter in the progress of our profession.

Committee on Structure and Function of Bureau of Professional Education • The Chairman and Vice-Chairman of the Bureau were appointed to the ad hoc committee on Structure and Function of Bureau of Professional Education, together with similar representation from the Bureau of Hospitals, a consultant from the Board of Trustees, and Dr. Victor R. Fisher as Chairman. The purpose of the Committee was to explore methods of unifying our accrediting procedures. The Bureau urges your serious and favorable consideration of the recommendations which developed from this study.

The Chairman of the Bureau expresses his sincere thanks to the members of the Bureau and its subsidiary agencies for their cooperation and support during the past year. The same appreciation is extended by the Chairman for the entire Bureau to the officers of the American Osteopathic Association, the Board of Trustees, House of Delegates, and Central Office staff.

Educational Standards for Osteopathic Colleges • In January the Chairman appointed Lawrence W. Mills, Chairman, Drs. Clyde C. Henry, Myron C. Beal, and R. McFarlane Tilley as a committee to rewrite "Educational Standards for Osteopathic Colleges." Consultants named to the Committee are A.O.A. General Counsel Milton McKay, Drs. C. D. Swope, Carl E. Morrison and R. P. Keesecker. The budgetary requirements for this committee are included in the budget requested for 1959-60.

Recommendations (approved) •

1. That the Chicago College of Osteopathy, Chicago, Illinois, be recognized and approved for the academic year 1959-60.

2. That the College of Osteopathic Medicine and Surgery, Des Moines, Iowa, be recognized and approved for the academic year 1959-60.

3. That the College of Osteopathic Physicians and Surgeons, Los Angeles, California, be recognized and approved for the academic year 1959-60.

4. That the Kansas City College of Osteopathy and Surgery, Kansas City, Missouri, be recognized and approved for the academic year 1959-60.

5. That the Kirksville College of Osteopathy and Surgery, Kirksville, Missouri, be recognized and approved for the academic year 1959-60.

6. That the Philadelphia College of Osteopathy, Philadelphia, Pennsylvania, be recognized and approved for the academic year of 1959-60.

7. That the Bureau of Professional Education and Colleges conduct a Seminar on the Teaching of Osteopathic Theory and Practice for the year 1959-60.

8. That the amendments to the Constitution and By-Laws of the American College of Osteopathic Obstetricians and Gynecologists, as ratified at its February, 1959 meeting, and numbered I to V, be approved.

Allan Eggleston, D.O.
Chairman

Committee on Clinical Study

► By directive of the Board of Trustees, the work of the Committee on Clinical Study has been directed to two projects: the clinical study project, and the interview project. Of the former projects of the Committee, its work on the cumulative index having been finished, this project was placed under the responsibility of the Executive Secretary. The projects of reviewing osteopathic and medical literature have been deferred indefinitely.

The Committee met in Central Office in November, 1958, and prepared its work for the year.

Gross postural survey • Study was made of a large scale project of clinical observation to be undertaken by the members of the Committee and such other members of the profession as could be enlisted to co-operate. The project selected was labeled "Gross Postural Survey." It is designed to determine the incidence of certain postural errors in patients seeking osteopathic care. A report form was developed for distribution and return. An accompanying statement of explanation was developed. A preliminary effort was pursued which resulted in 223 completed reports by 18 osteopathic physicians. Analysis of these reports revealed that a wealth of information about posture could be developed as a result

of this study, and subsequent studies which would develop from it. It also revealed certain flaws in the report form and in the method of distribution of forms.

New forms were developed. Distribution is being made through the Department of Information and Statistics, Central Office, upon receipt of names through the members of the Committee. The following procedure for distribution has been developed:

1. Committee members enlist the aid of co-operating physicians, and send lists of such physicians to the Department of Information and Statistics.

2. The department sends a set of 25 report forms, one statement of explanation and one summary sheet to each physician listed. A record is kept of all physicians so supplied.

3. Completed forms are returned to the Chairman of the Committee by the physicians co-operating.

4. The Chairman numbers the returns in sequence, lists the co-operating doctor's name, his code numbers on the reports and the chief complaints. He edits the reports to determine that they are properly completed. He then forwards the completed, numbered and edited reports to Information and Statistics.

5. The date of receipt is noted on record started when forms were sent out. Members of the Committee are periodically advised as to the returns received.

6. The data reported is transferred to code sheets which will later be serviced by the Statistical Tabulating Company. The report forms will be kept on file in Central Office until the study has been completed.

The Committee set a minimum goal of 2,500 reports for the study and hoped to obtain 5,000 reports. The reports are to be made on each "new patient" seen by co-operating doctors during the period of the study so that a "mill run" sampling will be accomplished. The postural factors under study are sufficiently gross and the criteria sufficiently broad to render the factor of error negligible. It is believed that a large volume will further stabilize the study. As of June 8 over 4,000 forms had been distributed, and over 300 completed forms edited.

It is hoped that the return will be of sufficient volume to permit a cut-off date of September 30. The Committee will then study the processed data and develop such conclusions as are indicated. It is anticipated that this study will produce the following:

a. Valuable information about the incidence of postural errors.

b. Direction for further, more refined studies into the problems of posture and its relation to health.

c. A corps of osteopathic physicians interested in, and capable of, doing careful clinical observation and reporting.

Interview project • This project was given further study at the November meeting of the Committee. The following outline of procedure was developed and adopted:

1. Arrange for the use of a tape recorder and 35 mm. camera and lights (Strobe, flash or other).

2. Be prepared to record at least 2 hours of tape and to take at least 20 color film shots.

3. Make appointment with the osteopathic physician to be interviewed, preferably at his office, but not during his regular office hours.

4. Explain to him the purpose of the interview, the procedure to be followed and the equipment to be used.

5. Assure the physician that the transcript and pictures will be sent to him for review, correction or addition; that the Committee on Clinical Study will not release either the transcript or pictures until the physician has expressed agreement.

6. Start the tape record of the interview by identifying the Committee, oneself, the physician being interviewed, his address, the subject, and date.

7. Attempt to center interview about his major interest and contribution. If the topic has not been established in advance, permit the doctor to select his own field.

8. Attempt to keep the interview related to the selected subject until there has been established a good record of the physician's theories and procedures related to the subject.

9. The interviewer is responsible for the interview. He must accomplish adequate coverage of the subject, and free expression by the physician by skillful questioning.

10. Use dermal pencil whenever it will increase the value of pictures. Take pictures as close to subject as possible. The immediate procedure is the point of interest.

11. *Do not rush the interview.* Find the pace that is easy for the physician. Develop adequate emphasis of the major points. When subject has been covered, stop recording.

12. Express the appreciation of the Committee for the interview, and assure the physician that he will have opportunity to review and approve the transcript and pictures before the Committee releases them.

13. Send tape to Executive Secretary, A.O.A., for verbatim transcription by stenographic service under Foundation for Research Grant.

14. Edit the transcript to provide a concise expression of the physician's theories and procedures demonstrated in acceptable current language.

15. Prepare a brief summary abstract of the material.

16. Send copies of the edited transcript and summary to all members of the Committee.

Interviews were conducted by members of the Committee with each other during the November meeting. Copies of the transcripts of these interviews are available. Only a few additional interviews have been completed.

One serious obstacle to this project has been the time-consuming and difficult job of transcribing the tapes of the interviews. Upon invitation of the President of the Foundation for Research of the New York Academy of Osteopathy, application was made for a grant of $500.00 to cover the cost of having such tapes transcribed by a stenographic service. This grant was approved by the Foundation for Research on May 11. Relief from the tedious chore of transcribing tapes should encourage the completion of more interviews by members of the Committee and co-operating physicians. The three major projects of the Committee have now reached the stage of development

that 1959-60 promises to be the most productive year of the Committee. Its expectations:

1. The first edition of the Cumulative Index should be published.

2. The Gross Postural Survey should be completed and resulting articles published.

3. The interview project should produce a sufficient number of interviews to afford additional material for publication.

Recommendation • That the Committee on Clinical Study be directed to develop its two current projects.

Charles L. Naylor, D.O.
Chairman

Osteopathic Progress Fund Committee

▶ The Osteopathic Progress Fund Committee, as recognized under the new A.O.A. structure, now has five members: a chairman (who also represents the Board of Trustees), a vice chairman, and representatives from the House of Delegates, the Association of Colleges, and the Auxiliary to the A.O.A. In this, the first year for the Chairman, the help of the Committee members and of Helen Frazier of Central Office staff has proved invaluable.

As was directed by the Board of Trustees in July 1958, the work of the Committee this year has been confined to the profession.

New director • Robert Bennett joined the Central Office staff on February 1 as director of the Osteopathic Progress Fund program. He comes to the work with much experience in professional fund raising and in public relations. He was for 18 years associated with a professional services business in Washington, D.C., has been a director for the Wells Company, an organization raising funds for churches, and has conducted many hospital fund drives.

Mr. Bennett's orientation to O.P.F. was a visit to the four midwestern colleges. He has written a pamphlet, "Why Give," that has been instrumental in producing an exhibit being used at osteopathic conventions, and has designed an organizational chart which is soon to be in use.

Committee meetings • Meetings of the Committee were held in September, January, and April, with the full Committee in attendance each time. The President and President-Elect, and in April Past President Carl E. Morrison, also attended.

The September meeting was concerned with a reiteration of old policies and the establishment of new ones, and with decisions on target areas for the year. In January the progress of the first half of the year was reviewed, and trips to various states were planned for Mr. Bennett and Dr. Starks. The April meeting was principally devoted to their report on the trip to New Mexico.

Support-through-dues and living endowment • We have had a year of substantial increase in contributions from the profession, largely because of the adoption of the support-through-dues plan. At this time 17 states are operating under the plan, or have voted in favor of it, and will be able to put it into effect within a year or two.

The 17 states which have accepted the plan contain 70 per cent of our osteopathic population. The states include California, Colorado, Florida, Indiana, Iowa, Michigan, Minnesota, Missouri, New Mexico, Ohio, Oregon, Tennessee, Texas, Virginia, Washington, West Virginia, and Wisconsin. Because their dues raises cannot become effective for a year, Wisconsin has placed an assessment of $100 on each member, and Virginia has made an outright gift of $700.

It has been established that the minimum need of our colleges is $1,000,000 a year, about $100 for each A.O.A. member. Therefore, it is necessary that we encourage each divisional society voting on the support-through-dues plan to make the annual dues at least $100. Some states have tried to pass a motion for $25.00 or $50.00. The Committee is discouraging this because it is very hard to raise dues once they are established.

In states where the support-through-dues plan is not being considered, the Committee is suggesting to the officers various ways for increasing their support on the voluntary plan. We feel that the more voluntary contributors we have, the more votes will be cast for the dues plan when the time comes. The voluntary or living endowment plan has been the program of choice for several years, but time has proved that it is not entirely successful. In one state where an active O.P.F. campaign was carried on for 6 years, only 50 per cent of the D.O.'s contributed. In others, one-fourth to one-third of the doctors contributed; and, in some even fewer than one-fourth gave.

Thus, the Committee feels that support-through-dues at the divisional society level is the only way our colleges can rely on continuous help from the profession. A volunteer giver is a dedicated person to the college of his choice. The support-through-dues does not alter his dedication, because he may designate the college to which his contribution may be sent. As we have stated before, the $1,000,000 a year, or $100 a member, is only the minimum need. Many doctors continue their support by supplementing their dues with generous gifts each year.

Target areas • After much discussion at each of the three meetings, it was decided that a member of the Committee and the director should visit several states to promote one or the other plan to increase support for osteopathic education. The states chosen were Illinois, Kansas, Maine, Massachusetts, New Jersey, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, Texas, Virginia, West Virginia, and Wisconsin.

At the time of writing, visits have been made to New York, New Mexico, Illinois, Texas, and Ohio. New Mexico, Ohio and Texas voted in favor of support-through-dues. In addition to passing the resolution, New Mexico gave $5,000 toward this year's goal. Illinois has agreed to conduct a campaign next

fall. Dr. Hewitt W. Strever, president of the New York association, conducted a campaign of his own with favorable results. The Chairman visited Kentucky and spoke at the convention banquets.

Contributions from public gifts are much lower this year, for two reasons. The Committee is confining its efforts to the profession, and last year there was one gift of $21,000, which was not repeated this year.

President Northup has given much of his time to promotion of O.P.F. during his state visits. The Committee wishes to thank him for his many accomplishments.

The Committee agreed that all D.O.'s assuming leadership in the A.O.A. or any of its affiliated organizations should support all national policies and programs. With that in mind, the Chairman wrote to all members of the 1958 House of Delegates who have not been contributing to the O.P.F. (40 in all), asking reasons for their lack of support. We received many answers giving various reasons. The Committee plans to follow up these letters.

Leadership support • For the last few years, the Committee has felt that state quotas should be adjusted. At the September meeting, a motion was passed that the quota for each divisional society should be set on the basis of $100 for each A.O.A. member. Membership is higher in some states, lower in others than it was in 1946 when the original quotas were established. Therefore, under the revised figures, quotas have been raised in some states and lowered in others. The total quota under the original plan was $986,640; under the new it is $1,023,400.

No report of this Committee would be complete without an expression of gratitude to the Auxiliary to the American Osteopathic Association. Mrs. McDowell has offered many constructive ideas, and is an untiring worker in her organization. Mrs. Francis E. Warner has spent much of her presidential time talking O.P.F. in many states. Through their efforts and those of their associates, the auxiliary increased its contribution from $8,013 in 1957-58 to $25,220 in 1958-59. This organization not only gives of its own funds, but its members are a great influence in selling their husbands on O.P.F.

The Chairman wishes to thank members of the Committee and the staff at the Central Office for their help in promoting the work of the O.P.F.

Robert Bennett
Director

Director of Osteopathic Progress Fund

► Since I have been employed as your O.P.F. director for only 4 months, this report will, of necessity, be quite brief. I reported for work on February 2. After getting a feel of the office, it was my pleasure to visit the four midwestern colleges, and to realize that O.P.F. has a tremendous job ahead. One is awed that so much is being accomplished with so little. With the full support of the osteopathic profession, and with foundations, industry, labor, and other philanthropic organizations and persons joining in, what a great contribution our colleges can make to the peoples of the world by educating more and more osteopathic physicians and surgeons!

Your director is proud of the O.P.F. Committee. Members have worked hard at the jobs assigned them, at a great sacrifice of time, money, and personal convenience. All members have gone beyond the call of duty in helping the director, and in making him feel welcome in his new job.

Program accomplishments in these 4 months have been gratifying. Six of the seven states visited by the Committee have voted support-through-dues at the $100 level. All of this reflects the groundwork done in the past. The efforts of our college presidents and of dedicated D.O.'s at the divisional level have played a vital part.

I should like to acknowledge the cooperation of the entire staff at A.O.A. headquarters, who, in addition to everything else, create such a friendly atmosphere in which to work. President Northup and President-Elect Young have done a herculean job for O.P.F. Last, but not least, your director is grateful to Helen Frazier, without whom he could not do his job.

Now we must look to the future. All states must be encouraged to go on a support-through-dues program. But this alone is not enough. We must educate the profession to the fact that support at the $100-per-man level is the bare necessity to keep our colleges operating. This is only the bread and butter. We must create more and more voluntary giving in and out of the profession. We must give the O.P.F. program the "hard sell." If we will give of our best to O.P.F., it will give us colleges that will supply our proud profession with more and more osteopathic physicians and surgeons who will go on to fulfill our mission in the world. We will have helped to make the world a better place in which to live longer and happier lives.

Robert N. Evans, D.O.
Chairman

Committee on Student Loan Fund

► The activities of the Student Loan Fund Committee have continued at an accelerated pace during the past year and, combining the activities of both funds, we report the largest year in the history of the effort—a total of 119 loans granted to 91 students for a total of $66,050.00, an increase of more than 20% over last year. Of these, 51 loans were in the A.O.A. Loan Fund, 11 of which were second loans. In the past four years, loans have totaled 93 each year except in 1956-57 when 92 loans were made. The amount granted during 1958-59 is approximately $11,000 more

DISTRIBUTION OF STUDENT LOANS—1958-1959

College	A.O.A. fund	Foundation fund	Total
Chicago	$ 4,550	$ 6,250	$10,800
Des Moines	4,750	2,500	7,250
Kansas City	5,950	12,750	18,700
Kirksville	3,050	2,750	5,800
Los Angeles	4,750	11,750	16,500
Philadelphia	5,500	1,500	7,000
	$28,550	$37,500	$66,050*

*This total includes 28 second loans: 11 from the A.O.A. fund, 17 from the Foundation fund.

than in the immediately preceding years.

Since the beginning of the loan program, loans from the A.O.A. fund totaling $329,643.00 have enabled 540 students to be graduated. Adding loans made from the Foundation fund since it was set up in 1949 ($153,505.00 to 210 students) we have a total of 750 students aided in an amount of $483,-148.00—nearly half a million dollars.

Dr. Edgar W. Culley, who had been the most generous supporter of the loan program during his lifetime, passed away in July, 1958 at the age of 87. From life insurance policies of which the Student Loan Fund was the beneficiary, we received $6,606.16.

In the past year 45 students completed repayment of their loans—28 in the A.O.A. fund and 17 in the Foundation Fund.

The Committee has set up a carefully scheduled collection procedure on all matured loans and the majority of the loanees handle repayments in an exemplary manner.

The National Defense Education Act of 1958, which contains a student loan program, is now operative and most of the osteopathic colleges are participating. The federal government contributes nine-tenths of the capital and the college one-tenth, and the recipient college administers the loan program in its school. The maximum loan is $1,000 to a student in any one year, and a total of $5,000 to any student. Because of the unexpected response from colleges throughout the country, which was in excess of the amount appropriated, a formula has been set up by which, in the future, the amount which any college would receive would be on the basis of $20.00 per student enrolled. Thus, with 500 students, a college could receive a loan fund of $10,000, unless it could justify a loan in a larger amount. It is therefore expected that this government loan program will supplement and not supplant the Association's program.

The Committee considered at recent meetings the matter of the maintenance of insurance collateral on all loans, a procedure that entails a considerable amount of clerical work at an expense of at least $2,000 to $3,000 annually. In the few instances in which a loanee permits his insurance policy to lapse, it is often difficult, if not impossible, to secure the reinstatement of the policy, and the Committee's only recourse, in such instances, is to declare the loan due and payable.

Members of the Committee have discussed the requirement of insurance collateral with several persons, including the Executive Secretary, our General Counsel and the head of the commercial credit department at our bank, and the consensus is that this requirement might well be discontinued and the co-signer protection strengthened by a satisfactory statement from an officer of the co-signer's bank regarding his account, and the requirement that, if a loanee is married at the time the loan is granted, his wife also sign the promissory note. The Committee, at its May meeting, directed that recommendations to bring about a change in the present rules on this subject be included in the annual report.

The Committee continues to be grateful to all who participate in the administration of the loan fund or who support and encourage the program. Special gratitude is extended to the members of the advisory committee on loans in each of the osteopathic colleges. Recipients of loans express their gratitude for assistance from the profession at a time when it is sorely needed and sincerely appreciated.

Recommendations (approved) • 1. That the requirement in the present "Plan for the Student Loan Fund" of the maintenance of a life insurance policy as collateral on each loan be rescinded.

2. That additional requirements for qualification as a co-signer on a Student Loan Fund note be established and that the Association's attorney be consulted as to the details involved in accomplishing this objective.

3. That, in view of increased tuition and fees in osteopathic colleges, the maximum of a loan which may be granted be raised from $500 to $750 per year. (The present maximum of $750 now available to a senior who did not receive a loan as a junior would not be changed.)

Vincent P. Carroll, D.O.
Chairman

Bureau of Hospitals

► The Bureau of Hospitals has once again had a busy and progressive year. Its activities since the July, 1958, meeting of the Board of Trustees and House of Delegates of the American Osteopathic Association are here reported.

Intern Matching Plan • In October, 1958, the Board of Trustees of the American Osteopathic Hospital Association adopted the Osteopathic Intern Matching Plan. This plan was then considered and approved by the Bureau of Hospitals and recommended to the Board of Trustees of the American Osteopathic Association for adoption. The A.O.A. Board approved the recommendation, and a joint committee of representatives of the A.O.H.A. and the Bureau of Hospitals of the A.O.A. was appointed.

This committee met in April to work out mechanics of the Plan, and it was then submitted to the hospitals approved for intern training, with final adoption dependent on acceptance by hospitals constituting more than 50 per cent of available approved internships. This came in May. By action of the Bureau of Hospitals and the A.O.A. Board, the Plan will be mandatory for all approved osteopathic hospitals, and will become effective with the 1960 class of interns.

The dean of each college was consulted and a representative was appointed by the committee to discuss the Plan with each junior class. All but one of the colleges accepted the invitation. We feel that while there may be mechanical defects to be ironed out and some problems to meet, the value of such a program can only be determined by a fair trial.

Manual of Procedure • In January the Board approved the Bureau's recommendation that the Manual of Procedure and Interpretation of the Bureau of Hospitals be approved for publication and distribution to registered and approved osteopathic hospitals. In addition, the Manual has been sent to all specialty colleges and boards. This should help create among hospital administrators and professional staff members a better understanding of the Bureau program.

Committee travel • In April, the Chairman of the Department of Public Relations requested this Chairman to attend a meeting in Salt Lake City on Future Hospital Planning sponsored by the U.S. Public Health Service and the American Hospital Association. In consultation with the Chairman of the Department of Public Relations, the following people were designated to represent the A.O.A. at similar meetings: Dr. H. W. Guinand at Chicago, Dr. M. Carman Pettapiece at Washington, D.C., and Mr. Louis Taylor at New Orleans. We believe much has been accomplished by this attendance. Our representatives were accepted on an equal basis with representatives from other organizations interested in future hospital care in the United States.

During the year the Chairman attended the dedication services and the opening of several new osteopathic hospitals in California. It is encouraging to note that osteopathic hospitals are being built and facilities added to existing hospitals throughout the country.

Associate staff membership • In July, 1958, the House of Delegates directed the Bureau of Hospitals to work out a solution to the problem of associate A.O.A. membership for osteopathic hospital staff members who are not osteopathic physicians. The Bureau recommends that a specific statement be included in the Manual of Procedure and Interpretation. This would require that hospitals wishing to grant staff membership to a physician not meeting Bureau requirements (as set forth on page 6, item C-2 of Minimum Requirements, Standards and Regulations for Osteopathic Hospitals Approved for the Training of Interns and/or Residents) submit to the Bureau an explanation of the circumstances and a listing of the physician's qualifications.

This statement would be substituted for the present item 4, Section C which says that "Staff privileges may be accorded other licensed physicians and dentists according to the By-Laws of the American Osteopathic Association."

Hospital inspections • The Bureau was also directed to study the application fee schedule, and the possibility of increased income from this source. At the October meeting, reported in January, the Bureau stated that in view of the statement of the A.O.A. Finance Committee that the Bureau has sufficient funds to carry out its present program, no increase in hospital inspection fees need be recommended at this time. The matter should be given further study, however.

No specific action was taken at the April meeting in this regard. However, the Bureau did adopt a recommendation that in addition to the usual expenses for special inspections and reinspections, as set forth in the Manual of Interpretation, a service charge of $25.00 should be stipulated to cover expenses that are involved in arrangements of special inspections and reinspections. The charge will also be applicable to the consultation service of the Bureau.

The Inspectors Manual is undergoing the revision that was adopted at the April meeting, and is being prepared for distribution to voluntary hospital inspectors. The changes made were only those necessary to have the contents conform to the recently revised Code Book and Manual of Interpretation.

Number of beds • In January the Bureau recommended to the Board of Trustees that the required minimum number of adult patient beds in intern-training hospitals be changed from 25 to 45. The recommendation was adopted by the Board as amended: "That the minimum number of adult patient beds for intern-training hospitals be changed from 25 to 45 beds provided currently approved hospitals for intern training will not be dis-

TRAINING HOSPITALS AND INTERNSHIPS—1957-1959

	1957	1958	1959
Intern training hospitals	93	94	94
Registered hospitals	105	107	113
Beds in intern training hospitals	6573	7279	7759
Beds in registered hospitals	2499	2503	2678
Total beds	9072	9782	10437
Increase in intern training beds		706	480
Internships available		469	508
Internships unfilled		46	unreported
Graduates to serve internships		438	468
Hospitals with fewer than 45 beds	34	26	22
Internships affected	68	52	44
Interns serving in hospitals with fewer than 45 beds		34	25
Hospitals with fewer than 45 beds with intern vacancies		10	12

qualified on the basis of less than 45 beds before 1961." The Bureau is making this recommendation to the House of Delegates.

The inspection program is continuing to develop, but is not near the goals set for it. We ask the cooperation and patience of the profession in the task to improving our inspection procedures and overall program.

Scientific papers • Last January, a Board memorandum directed the Bureau to discuss the collection of scientific papers, with an agency to be made responsible for such collection. The Bureau recommends that all osteopathic hospitals approved for residency training be reminded by memorandum of the existing requirement in this regard. It also recommends that specialty boards of the colleges be designated to be responsible for collecting these papers.

The cooperation of the officers of the American Osteopathic Association, the Board of Trustees, and the Central Office Staff has been very much appreciated during this year. The Chairman would particularly like to recognize the efficiency and fine cooperation of the Secretary of the Bureau of Hospitals and her staff. In addition, we would like to thank the American Osteopathic Hospital Association and the osteopathic colleges for their continued cooperation. May we assure you that the Bureau of Hospitals will continue to attempt to reach its goals of improved training programs and better patient care.

Robert A. Galbraith, D.O.
Chairman

Bureau of Research

▶ The A.O.A. research program continues to increase in volume and importance. From the Bureau's recent review of projects receiving grants-in-aid from the Association, it is evident that the quality, accomplishments, and scope of these programs have become increasingly significant.

APPLICATIONS FOR RESEARCH GRANTS APPROVED FOR 1959-60

Institution	Investigator	Amount	Project
Kansas City College of Osteopathy and Surgery	Cole, W. V.	$ 5,550	Hypertrophy in the Neuromuscular Apparatus
	Mielcarek, J. E.	7,300	Study of Developing Nerve Tissue in the Living State of Fluorescence Tracers and Microscopy
Kirksville College of Osteopathy and Surgery	Denslow, J. S.	10,700	Anatomical Relationships, Facilitation and Related Phenomena in Man
	Dun, F. T., Ph.D.	14,700	The Components of the Action Potential and the Liberation of ACh
	Eble, J. N., Ph.D.	6,975	Continued Studies on Somatic Autonomic Interchange
	Thomas, P. E.	6,900	Influence of Myofascial and Connective Tissue Irritation on the Function, Morphology and Cytochemistry of Nervous Tissue
	Korr, I. M., Ph.D. Div. of Phys. Sciences	21,150	Continued Studies in Somatic-Autonomic Interchange and Related Phenomena
	Ho, R. W. H.	3,800	Fellowship
Chicago College of Osteopathy		2,000	Matching Funds for Basic Research Equipment
	Lehmkuhle, J. M.	455	Standardization of Bioassay of Antimycotic Properties of Catalpa Speciosa
	McGovern, E. L.	500	Serum Tests to Determine Rheumatic Fever in Pediatric Patients

During the year, the Bureau of Research held two meetings, one on January 22 and the other on April 4 and 5. Both were in Central Office, Chicago. At the January meeting, two applications for grants and one application for renewal of a fellowship award were approved.

Grants for the year total $97,135. The estimated amount the Bureau will have at its disposal in July is $81,830. This will include $50,000 from the General Fund, should this allocation be continued. At the April meeting eleven applications for grants for 1959-60 were approved by the Bureau.

The Bureau of Research during this past year has attempted, by working closely with the colleges and the Council on Development, to re-evaluate and make some changes in our research program which will benefit not only the individuals doing research work and the colleges, but the entire profession as well. In addition to the new ideas projected, we are maintaining the previous items that have proved so successful.

The Research Conference was held in Chicago, March 7-8. It was well attended. The Bureau feels these conferences are well worth while, and wishes to continue them. However, the Committee on Student Attendance at Scientific Assemblies was discharged; this activity will be indefinitely suspended. We believe the funds can better be used elsewhere.

The Bureau feels that new methods of checking grants-in-aid applications might prove useful in determining the value of our research program, and is attempting to establish a roster of scientists. This will enable the Bureau to set up a panel of consultants—that panel could, on formal or informal basis, screen research projects and attempt to establish their scientific value. The Bureau has approved a motion that a Roster of Scientific Consultants be established with a budgetary allotment of $500.00.

The Bureau at its April meeting reviewed the manual of procedure.

Recommendations were made to extend its objectives to include those of the A.O.A.. The statement of policy was replaced by a shorter statement. Some changes were made in the interest of clarity for the applicants; others, concerned with basic policy, were changed in the interest of broadening the scope of the Bureau. The grantee's guide was also studied and a few changes made for reasons of clarity.

The Bureau realizes the difficulties of the profession as well as of its research program. They stem mainly from the lack of finances and of personnel. However, in conjunction with other committees, the Bureau is formulating long-range plans that include:

1. Stimulation of the colleges in the projection of research.
2. Determination of the amount of money needed for research.
3. Putting information in a package and turning it over to the Osteopathic Foundation, for use in its work of raising outside money.
4. Administration of the program through the Bureau.

Recommendations • Fourteen recommendations were approved. Of them, eleven covered the applications for 1959-60 grants, as listed in the chart on page 147. The remaining three were:

That $500 be allocated for the purpose of developing a roster of scientific consultants.

That $2,500 be appropriated for the 1960 Conference on Research.

That the revised Manual of Procedure of the Bureau be approved.

True B. Eveleth, D.O.
Chairman

Bureau of Conventions

▶ Many changes in the format and scheduling of the annual convention are now under investigation and study. Until they are acted upon, there is little for the Bureau to report. The manual of the Bureau should be completely revised, yet revision must await House action.

If the Board of Trustees and House of Delegates are going to meet at a time separate from the scientific program, the entire procedure for setting up the convention will be altered. While this would simplify certain aspects of convention preparation, a greater challenge will be presented in producing the envisioned clinical assembly. Furthermore, the purposes for the scheduling of the convention every other year in Chicago will no longer exist. Doubtless the House will meet in Chicago annually. The clinical assembly, however, could be held in a greater number of locations than could previous annual conventions.

Recommendation (approved) • That this schedule of fees be set for the 1960 convention:

A.O.A. members, eligible non-members, and adult guests, $25.00.

Ineligible non-members, $50.00.

A.A.O.A. delegates whose husbands are not in attendance, $10.00. This includes a ticket for the annual tea.

No fee will be charged students, interns, residents, their wives, and junior guests.

Tickets for social affairs and children's activities may be purchased. The latter will be $5.00.

HEADQUARTERS ACTIVITIES

National staff gains new member

▶ Mortimer T. Enright joined the staff at National Headquarters as administrative assistant to Dr. True B. Eveleth, Executive Secretary.

Mr. Enright

Mr. Enright comes to the Association from a post in the public relations bureau of the Portland Cement Association. Previously, he was assistant director of public relations of the Worthington Corporation, New York, manufacturers of heavy machinery and air conditioning equipment. He has also been a member of the public relations staff of the city of Chicago, of the Quaker Oats Company of Chicago, and of the American National Red Cross of Washington, D.C.

Mr. Enright is a graduate of Northwestern University in psychology and journalism, and is a navy veteran of World War II. He is a native of Chicago, is married, and lives in Evanston, Illinois.

Robert Bradner joins staff of P.&P.S.

▶ Robert Bradner is now a member of the writing staff of the A.O.A. Division of Public and Professional Service.

Mr. Bradner holds a bachelor's degree from Yale University, and a Master's degree in journalism from Northwestern University, obtained following his army service.

He comes to the Association from a position in the administrative division of R. R. Donnelley and Sons Company, Chicago. A native of Massachusetts, Mr. Bradner is married and lives in Chicago.

This section is published monthly to inform the practicing physician about new drug products and medical equipment made available on the market. It is a reference section prepared by THE JOURNAL *from descriptive material furnished by ethical manufacturers. The American Osteopathic Association does not necessarily advocate the use of these products nor disapprove any product not included. The purpose of the section is to provide trustworthy information in a convenient form.*

NEW PRODUCTS

USHER'S MARLEX MESH

Source • Marlex polyethylene is a new plastic developed by Phillips Chemical Company, Bartlesville, Oklahoma, and introduced to the plastics industry in 1957. The source of the resin is ethylene gas in a carrier solution, by catalytic action at relatively low pressures.

Description • Marlex is a high-density polyethylene with a crystalline molecular structure and therefore a high softening temperature and exceptional tensile strength. The material can be extruded as a monofilament. It is resistant to water, chemicals, oils, bacteria, and fungi. For prosthetic use Marlex polyethylene is in the form of a plain-weave mesh which was developed by Dr. Francis C. Usher and the Surgical Research Laboratory at Baylor University College of Medicine in cooperation with the Research and Development Laboratories of the Phillips Chemical Company. Since the mesh can be calendered, it is soft and pliable, showing minimal fragmentation and maximal flexibility. Tensile strength of the mesh is 50,000 to 150,000 lb. per sq. in.

Indications • Marlex Mesh is used for repair of tissue defects of the chest and abdominal wall, when the defect is large and tissues at the site cannot be used. Clinical reports have shown that rapid fibroplasia takes place through the graft. The mesh produces little tissue reaction and is inert in the presence of infection. Since the plastic substance is a monofilament it does not have any capillary action, lessening the possibility of sinus formation or slough of the graft.

How supplied • Usher's Marlex Mesh is available in a sterile package in two sizes: 6 by 12 inches and 1½ by 3½ inches.

Manufacturer • Davol Rubber Company, Providence, Rhode Island.

References • Usher, F. C., and Wallace, S. A., A.M.A. Arch. Surg. 76:997, 1958. Usher, F. C., Ochsner, J., and Tuttler, L. L. D., Jr., Am. Surgeon 24:969, 1958. Usher, F. C., and Gannon, J. P., A.M.A. Arch. Surg. 78:131, 1959. Usher, F. C., and others, A.M.A. Arch. Surg. 78, 138, 1959. Usher, F. C., Am. J. Surg. 97:629, 1959. Usher, F. C., Hill, J. R., and Ochsner, J. L., Surg., in press, 1959. Usher, F. C., Am. Surgeon, in press, 1959.

ENDRATE® DISODIUM

Chemistry • Endrate Disodium is a brand of edathamil, a synthetic compound known also by its chemical name, ethylene diamine tetraacetic acid, commonly abbreviated to EDTA. It is supplied as the disodium salt.

Pharmacodynamics • Endrate Disodium combines with metals in the body and releases them so that they are excreted. The drug is a chelating agent, a substance which unites with cations to form chelates, or ring complexes. When a chelate is formed, a cation becomes an integral part of a stable ring structure and ceases to act as a free ion. Endrate Disodium forms chelates with the cations of most metals, particularly barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, strontium, titanium, zinc, and zirconium, as well as the actinides (for example, plutonium, thorium, and uranium) and the lathanides. Endrate Disodium chelates act somewhat like ion-exchange resins, since a cation which is weakly bound can readily be displaced by one which tends to be more strongly bound.

Absorption, fate, excretion • When C^{14}-labeled EDTA was given intravenously or intramuscularly to human subjects, almost all of it could be accounted for in the urine within 24 hours.[1] The investigators concluded that calcium EDTA passes through the body unchanged, and leaves the kidney by both glomerular filtration and tubular excretion. It was found that the parenterally administered drug mixes with almost all body water, except that it enters the spinal fluid relatively slowly, and does not pass into the red cells. The drug was shown to be absorbed poorly (a maximum of 5 per cent) when given by mouth, and practically not at all when applied to the skin.

Toxicology, contraindications • Clinical reports indicate that there is little danger from toxic effects in the adult if the dose does not exceed 3 grams in 24 hours.[2] The physician is advised to follow the dosage recommendations carefully and to consult the "Precautions" section in professional literature before beginning treatment. Hypocalcemia represents a theoretical danger to the patient, although no such cases have been reported to date. Since the drug may act as an irritant to the tissues, care must be taken to avoid extravascular infusion. There is a theoretical danger that healed, calcified tuberculosis might be reactivated by Endrate Disodium. When large areas of metastatic calcium involve the internal wall of the heart or large or vital arteries, caution should be exercised to avoid calcium embolism. Urinalysis should be performed frequently during treatment; any

untoward findings are an indication for withdrawal of the drug. If clinical evidence suggests any disturbance of liver function, appropriate laboratory tests are indicated. It is strongly recommended that Endrate Disodium not be administered to a patient with renal disease.

Indications • A growing body of evidence indicates that Endrate Disodium may play an important part in the treatment of various disorders. The ability of this substance to form a soluble chelate with calcium suggests its use in the treatment of pathologic calcification of various types;[3] such use is recommended, however, only when the severity of the disease justifies the aggressive measures associated with this type of therapy. Clinical reports also indicate that Endrate Disodium is useful in cases of intractable angina pectoris,[4,5] scleroderma,[6-9] porphyria,[10] and digitalis intoxication.[11] There have been many reports of the use of other salts of EDTA in the treatment of poisoning by lead, manganese, and other metals. Both acute and chronic cases may show beneficial results from the use of Endrate Disodium; however, it should be remembered that this substance is considerably more toxic (on a weight for weight basis) than the calcium salt of EDTA.

Dosage schedule • Recommended daily dosage is 50 mg. per kg. of body weight. The required volume of Endrate Disodium solution should be diluted with 500 cc. of 5 per cent dextrose in water or with isotonic saline solution and administered by intravenous infusion during a period of not less than 2½ hours; the usual infusion time is 3 to 4 hours. Total number of days of treatment is determined by individual cases. Present evidence indicates that toxicity depends on both total dosage and speed of administration; therefore the administration of this drug must not be hurried.

How supplied • Endrate Disodium, 150 mg. per ml., 20-cc. ampoules in boxes of 5.

Manufacturer • Abbott Laboratories, North Chicago, Illinois.

References • 1. Foreman, H., and Trujillo, T. T., J. Lab. Clin. Med. 43:566, 1954. 2. Seven, M. J., Antibiotic Med. and Clin. Therap. 5: 251, 1958. 3. Clarke, N. E., Clarke, C. N., and Mosher, R. E., Am. J. Med. Sci. 229:142, 1955. 4. Clarke, N. E., Clarke, C. N., and Mosher, R. E., Am. J. Med. Sci. 232:654, 1956. 5. Boyle, A. J., and others, Bull. Schweiz. Akad. Med. Wiss. 13:408, 1957. 6. Klein, R., and Harris, S. B., Am. J. Med. 19:798, 1955. 7. Rukavina, J. G., and others, J. Invest. Dermat. 29:273, 1957. 8. Price, J. M., and others, J. Invest. Dermat. 29:289, 1957. 9. Mease, J. A., Jr., personal communication, 1957. 10. Peters, H. A., and others, Ann. Int. Med. 47:889, 1957. 11. Gubner, R. S., and Kallman, H., Am. J. Med. Sci. 234:136, 1957.

QUINAGLUTE® DURA-TAB S.M.®

Source • Cinchona.

Chemistry • Quinaglute Dura-Tab S.M. is a modern, sustained-action tablet produced by a special process wherein the active drug, 5 grains of quinidine gluconate, is released at a carefully controlled, even, predictable rate.

Pharmacodynamics • Acts chiefly on cardiac muscle to restore normal rhythm in auricular fibrillation. It increases the refractory period of auricular muscle and decreases its irritability and rate of conductivity.

Absorption, fate, excretion • The greater part of administered quinidine is destroyed in the body. A large part of the quinidine is removed from the blood in the liver.

Toxicology • The toxic manifestations are those of quinidine in general, which have been well established. Fortunately, serious untoward effects are relatively rare. Among the toxic manifestations may be included nausea, vomiting, and pyretic, allergic, cerebral, and cardiac (myocardial depressing) effects. The patient must be carefully and frequently observed by the supervising physician. If toxic symptoms occur, administration should be discontinued. Some patients may be sensitive to any quinine preparation. Antidote: Gastric lavage, emetics, charcoal, stimulants.

Indications • Quinidine is effective in the treatment of paroxysmal and established atrial fibrillation and flutter, extrasystoles (atrial, nodal, and ventricular), paroxysmal atrial, nodal, and ventricular tachycardia, and ectopic rhythms resulting from digitalis.

Contraindications • The presence of complete heart block. Caution should be observed when bundle-branch block is present. If the QRS complex in the electrocardiogram widens by 25 per cent and the ectopic rhythm has not been corrected, the drug should be discontinued. Individual idiosyncrasies or toxic systemic reactions contraindicate its use.

Dosage schedule • The quantity necessary for adequate therapeutic effect short of toxicity must be ascertained in each patient. It should be noted that quinidine gluconate contains 62.3 per cent anhydrous quinidine, whereas quinidine sulfate contains 82.66 per cent quinidine, and this should be taken into consideration in prescribing. For example, 10 grains (2 Quinaglute Dura-Tab S.M. tablets) contain 6.2 grains of the quinidine alkaloid, whereas 10 grains of quinidine sulfate contain 8.3 grains of the quinidine alkaloid. The dosage for conversion of auricular fibrillation to normal rhythm, in most cases, is 2 Quinaglute Dura-Tabs S.M. 3 to 4 times a day, for 2 to 3 days. For maintenance, 1 or 2 Dura-Tabs are administered at intervals of 10 to 12 hours. Since each dose maintains plasma levels up to 12 hours, no night dosage is needed.

How supplied • Bottles of 30, 100, and 250 Dura-Tab tablets, each 5 grains of quinidine gluconate.

Manufacturer • Wynn Pharmacal Corporation, 5111 West Stiles Street, Philadelphia 31, Pennsylvania.

References • Bellet, S., Finkelstein, D., and Gilmore, H., A.M.A. Arch. Int. Med. 100:750, 1957. Bellet, S., Am. Heart J. 56:479, 1958. Finkelstein, D., Pennsylvania M. J. 61:1216, 1958.

DIMETANE® EXPECTORANT

Chemistry • Dimetane Expectorant is an antihistaminic-antitussive compound supplied with or without codeine. Each 5-cc. teaspoonful of Dimetane Expectorant contains parabromdylamine maleate (Dimetane), 2 mg.; glyceryl guaiacolate, 100 mg.; phenylephrine hydrochloride, USP, 5 mg.; and phenylpropanolamine hydrochloride, NNR, 5 mg. The vehicle is an aromatic syrup. Dimetane Expectorant-DC contains, in addition to the above ingredients, dihydrocodeinone bitartrate, NF, 1.8 mg.

Pharmacodyamics • Parabromdylamine maleate exerts antihistaminic action in allergic manifestations of respiratory illness. Glyceryl guaiacolate increases respiratory tract fluids, providing expectorant and demulcent actions. The sympathomimetic amines phenylephrine and phenylpropanolamine exert nasal decongestant and bronchodilator effects, with less action on the central nervous system than occurs with ephedrine and amphetamine. Dihydrocodeinone bitartrate enhances suppression of cough with minimal effects on respiration.

Toxicology • Overdosage with either form of Dimetane Expectorant may result in the toxic effects associated with any of the ingredients. Mild drowsiness may occur infrequently. Excitement resulting from the sympathomimetic amines may occur with large doses, but in the therapeutic range this is unlikely.

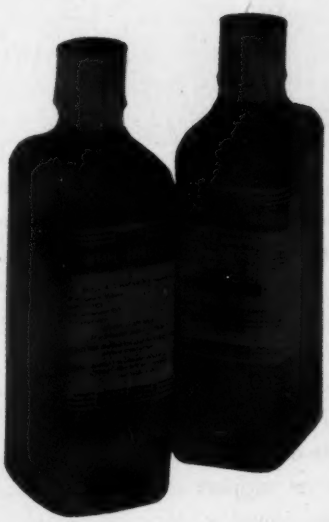
Indications • Dimetane Expectorant is indicated for relief of coughing and for symptomatic relief in allergic states in which expectorant action is desirable, as in bronchial asthma, asthmatic bronchitis, and other forms of bronchitis including chronic lung diseases, emphysema, fibrosis, and chronic bronchitis. The drug has proved useful for nasal decongestion and bronchiolar dilation in the treatment of acute upper respiratory infections. Dimetane Expectorant-DC is indicated in the treatment of the same disorders when one desires the antitussive properties of dihydrocodeinone.

Contraindications • Dimetane Expectorant should not be used by patients sensitive to antihistamines. It should be administered with caution to patients with cardiac or peripheral vascular diseases and those with hyperthyroidism.

Dosage schedule • Adults, 1 to 2 teaspoonfuls four times a day, or more as indicated. Children, ½ to 1 teaspoonful three or four times a day.

How supplied • Bottles of one pint and one gallon. Dimetane Expectorant-DC is an exempt narcotic.

Manufacturer • A. H. Robins Company, Inc., Richmond 20, Virginia.



SPINAL BRACES

Description • Three new braces now available incorporate recent improvements in the design of the Taylor, Knight, and Williams spinal braces which have been in use for some years.

The Taylor brace, the most familiar of the three types, was designed in 1863 specifically to produce hyperextension of the spine by exerting force backward at the hips and shoulders and forward at the middle of the back—the widely accepted "three-point principle" of support. On the basis of this design a new brace has been developed with four specific improvements: (1) Liberal extension of the crosspiece joining the posterior upright bars and addition of a system of shoulder and chest straps which move freely, insuring greater comfort under the arms and positive security of the posterior upright bars in any position; (2) rapid replacement of the strap unit without inconveniencing the patient; (3) replacement of the old "pie-pan" type of abdominal pad with a corset or support encompassing the entire lower or pelvic section of the brace; (4) reduction in the weight of the frame by the use of aluminum alloy, with no sacrifice of rigidity. The pelvic band is "butterfly" style, giving added fitting quality to the brace. The new type of corset insures restoration of posture in the lower abdomen and back and also provides a garment that can continue in use after the rigid section of the brace is no longer needed.

The Knight, or "chair-back," type of brace was designed to give lateral support and not extension. Especially useful for achieving immobility, this brace prevents lateral and rotary movements of the lumbar spine. The new version of this brace supplies a corset support which is more secure and more normal in appearance than the conventional strap and abdominal pad arrangement. The lateral uprights on the back of the brace are fastened to the thoracic band with a sleeve screw instead of rivets, making adjustment simple and fast. The brace also incorporates the butterfly type of pelvic band and the specially alloyed aluminum framework.

The Williams lordosis brace was designed to exert a constant corrective force on the lumbar spine, lumbosacral joint, and pelvis; it permits free flexion of the lumbar spine but prevents extension and lateral bending. The appliance consists of a pelvic band, a dorsal band, and two uprights on each side; the brace is fastened in front with an elastic abdominal section with zipper closing. There is a low abdominal pad of leather with three webbing straps on each side, two for stabilizing and one for furnishing corrective force. The newly designed brace eliminates many undesirable features of previous designs by reducing bulk and extra weight through the use of aluminum instead of steel, and lightweight but strong elastic and leather.

Indications • The Taylor type of brace is indicated for fracture of lumbar and dorsal vertebrae, arthritis, tuberculosis of spine, arthritic deformities, postoperative fusions, sacroiliac lesions, and scoliosis. The Knight type is indicated for use in spinal fusions, arthritis, and any condition requiring reduction in rotary and lateral motion in the sacrolumbar region. The Williams brace is used to overcome excessive lordotic lumbar curve.

How supplied • The three types of spinal braces are available in small, medium, large, extra-large, and custom sizes. Complete information including catalog and the names of dealers will be furnished on request.

Manufacturer • Alexander Industries, Inc., 373 East Broad Street, Dept. 12 P, Columbus 15, Ohio.

TEMARIL® SPANSULE® CAPSULES

Chemistry • Each Temaril Spansule sustained-release capsule contains 5 mg. of trimeprazine (dl-10-(3-dimethylamino-2-methypropyl)-phenothiazine), as the tartrate, distributed among hundreds of minute pellets with special protective coatings.

Pharmacodynamics • Temaril depresses the central nervous and sympathetic systems. In addition, it counteracts histamine, blocks conditioned escape response and displays moderate sedative and mild anti-inflammatory actions. It also exhibits the antiemetic and potentiating effects so typical of phenothiazines. Although its exact mode of action is not known, Temaril apparently exerts a specific antipruritic effect which is not directly related to its other characteristics.

Toxicology • Serious side effects are rarely seen at the recommended dosage of Temaril. Those side effects that do occur are usually mild and transient. Mild and temporary drowsiness is the most frequently encountered side effect; this usually disappears after several days of medication. Persistent drowsiness may be overcome by reduction of dosage or by addition of one Dexedrine® Spansule® capsule (brand of dextro-amphetamine sustained-release capsules) to the morning dose of Temaril. Dizziness, dryness of mucous membranes, and gastrointestinal upsets have occurred occasionally. These, too, usually disappear after several days of medication. As with any phenothiazine derivative, Temaril should be administered discriminately, and its use should be attended by careful and regular observation. Patients receiving it should be watched for the possible occurrence of agranulocytosis or other serious side effects seen infrequently with some phenothiazine derivatives. Because virtually all reported cases of agranulocytosis associated with the administration of phenothiazine derivatives have occurred between the fourth and tenth weeks of treatment, patients on prolonged therapy should be observed particularly during that time.

Indications • For the treatment of mild and severe pruritus, whether acute or chronic, as seen in such conditions as neurodermatitis, nummular eczema, atopic dermatitis, lichen simplex chronicus, urticaria, pruritus vulvae et ani, stasis dermatitis, senile pruritus, contact dermatitis, dermatitis venenata (poison ivy, poison oak, poison sumac, etc.), industrial contact dermatitis, drug eruption, lichen planus, dyshidrotic eczema, irradiation dermatitis, burns (healing phase), cast itching, erythema multiforme, dermatitis herpetiformis, insect bites, zirconium granuloma, and in such nondermatologic conditions as chickenpox, measles, polycythemia vera (erythrocytosis), Hodgkin's disease, leukemia, and diabetic pruritus.

Contraindications • None. However, the physician should always be satisfied that the underlying condition causing the symptom of itching has been diagnosed before administering Temaril.

Dosage schedule • The Spansule capsule form provides 24-hour relief of itching with no breakthrough of the symptom since drug effect is continuous and uniform. For adults the usual dosage is one capsule every 12 hours. However, dosage with Temaril should always be adjusted according to the severity of the symptom and the response of the patient. When itching is primarily a night-time problem, one or two Temaril Spansule capsules at night may be effective without a supplementary daytime dose. Optimal results will be obtained in most cases when Temaril is used for both daytime and night-time therapy. Refractory patients will require higher dosage. If itching is not relieved within 1 or 2 days, the daily dosage may be increased to two capsules at night and one during the day. If additional therapy is required, two capsules may be given every 12 hours. Some resistant cases will require up to 30 or 40 mg. of Temaril daily for relief. (In nonambulatory patients with severe itching, as much as 80 mg. in 24 hours has been used with no ill effects.) While the incidence of drowsiness usually increases as dosage is increased, many physicians feel that sedation is of therapeutic advantage in difficult cases. For children aged 6 to 12, the recommended dosage is one capsule daily. In severe cases, one capsule every 12 hours is recommended. Total daily dosage should not exceed 10 mg. For children below 6, Temaril tablets and syrup are recommended because of their greater dosage flexibility.

How supplied • Temaril Spansule capsules, 5 mg., in bottles of 30. Also available: tablets, 2.5 mg., in bottles of 50 and 500; syrup, 2.5 mg. per teaspoonful (5 cc.) in 4-fluid-ounce bottles.

Manufacturer • Smith Kline & French Laboratories, 1500 Spring Garden St., Philadelphia 1, Pennsylvania.

References • London, I. D., J. M. A. Alabama 28:342, 1959. Pillsbury, D. M., and others, The Schoch Letter (Current News in Dermatology), Nov. 1957. Callaway, J. L., and Olansky, S., North Carolina M. J. 18:320, 1957. Panaccio, V., Canad. M, A. J. 80:885, 1959. Dickstein, B., J. Albert Einstein M. Cent. 7:115, 1959. Lincoln, C. S., Jr., and others, California Med. 90: 126, 1959. Hudson, A. L., Canad. M. A. J. 80:125, 1959. Green, M. A., Ann. Allergy 16:619, 1958. Sanner, J. C., Pennsylvania M. J. 61: 1632, 1958. Kienhofer, R. F., Scientific Exhibit, Twelfth Clinical Meet. A. M. A., Minneapolis, Dec. 1958. Grieco, V. F., Internat. Rec. Med. 171:618, 1958. Watkins, W. T., Scientific Exhibit, M. Soc. Virginia, Richmond, Oct. 1958. Goldberg, L. C., and Diamond, A., Antibiot. Med. & Clin. Therap. 5:582, 1958. Williams, P. L., Northwest Med. 57:1162, 1958. LeVan, P., Clin. Med. 5:1077, 1958. Fraser, H. A., Bull. Assoc. Mil. Derm. 7:12, 1958. Schoch, E. P., and others, Scientific Exhibit, Ann. Meet. A. M. A., San Francisco, June 1958. Schoch, A. G., and Alexander, L. J., The Schoch Letter (Current News in Dermatology), Nov. 1957. Pellerat, J., Talk before Symposium of French Dermatology Society, Marseilles, Oct. 1956.

CURRENT LITERATURE

The fetal electrocardiogram in multiple pregnancy

▶ On the basis of a study of 9 sets of twins, 1 set of triplets, and 1 set of quadruplets, the use of the fetal electrocardiogram is described by Saul David Larks, Ph.D., in the May 1959 issue of the *American Journal of Obstetrics and Gynecology*. The fetal electrocardiogram becomes large and clear rather suddenly at about 19 to 21 weeks of pregnancy. It is thus possible to make definite diagnoses of multiple pregnancy at this stage of gestation or even earlier. The fetal heart rates can be determined accurately for each fetus by counting the number of fetal complexes per 10 seconds and multiplying by 6. Integrator methods are probably useless in multiple pregnancy, since the instrument in such methods would have difficulty in accurately following two or more fetal hearts. The fetal electrocardiogram provides means for estimating the fetal presentation for each fetus with great accuracy. Complete accuracy should not be expected until further improvement of technic is achieved. The frequency of changes in presentation can also be studied. The fetal electrocardiogram can thus provide information as to the number of fetuses, information about the presentation at time of recording, and heart rate information. Also, because of the present reluctance to use x-irradiation for pregnant woman, the electrocardiogram provides a completely safe alternative method for the diagnosis of multiple pregnancy.

Poisonous snake bites

▶ The case of a man, 39 years old, who survived a rattlesnake bite is reported by Thomas McCreary, M.D., and Harold Wurzel, M.D., in the May 16, 1959, issue of *The Journal of the American Medical Association*. Immediate treatment consisted of incision, suction, and application of a tourniquet. Later the patient was given multiple incisions; hypodermic injections of antivenin; sedation with phenobarbital sodium; venoclysis with sodium chloride, dextrose and calcium; parenteral penicillin, and streptomycin, and whole blood transfusion; and oral atropine, antacids and diphenhydramine hydrochloride. Clotting could not be induced and fibrinogen was completely absent 3 hours after the bite. All figures relating to coagulation were normal 1 day, 5 days, and 6 days after the bite, but symptoms of serum sickness and other complications lasted until the twelfth day.

The age and size of the victim affect the gravity of a snake bite. Very young and very old victims are more susceptible to serious aftermath, and bites are less dangerous on extremities and in tissues where absorption is poor. Some doubt has recently been cast on the time-honored use of the tourniquet by those who feel that it increases local tissue destruction without preventing spread of toxins. There is also conflicting evidence about the efficacy of incision and suction at the site of the bite. If there is reason to believe the bite may be serious, antivenin should be given, after proper precautions relative to administration of horse serum have been taken. The victim should be hospitalized, and blood typing and crossmatching should be done, since toxins from the bite may later make this impossible. Careful, prolonged follow-up is necessary. With increasing popularity of camping and outdoor activities, snake bites may become more numerous, and every physician, regardless of his location, should be prepared for such an emergency.

Internal menstrual protection

▶ The successful use of a safe and sanitary menstrual cup is reported by Rebecca Liswood, M.D., in *Obstetrics and Gynecology*, May 1959. Extensive trials have shown the menstrual cup to have many advantages over the ordinary menstrual pad and the vaginal tampon. The cup is clean and convenient; it eliminates odor, chafing, and other sources of embarrassment or discomfort; there is no disposal problem; the cup's capacity is adequate, and blood clots cannot escape as sometimes happens with tampons; the cup is economical, since one lasts a year or longer. The soft, pliable rubber of the cup adjusts itself comfortably to the changing positions and functions of the body. Virgins may use the cup without harm, and with experience in its application the

cup has proved psychologically acceptable to most women. The only contraindications to use of the menstrual cup are those instances of prolapse, retroversion, or anteflexion in which the descent or direction of the cervix would bring it in close contact with the basin of the cup.

Pathogenesis of hypofibrinogenemia in placental abruption

▶ Quantitative studies of the fibrin content of uterine blood clots in cases of placental abruption have been reported by Jack A. Pritchard, M.D., and Marjorie R. Wright, B.S., R.N., in *The New England Journal of Medicine,* July 30, 1959. The authors conclude that a major mechanism of hypofibrinogenemia associated with such cases may be continued hemorrhage and coagulation within the uterine cavity at the site of placental separation, resulting in local deposition of fibrin and progressive hypofibrinogenemia.

In 7 cases of total placental abruption with varying degrees of hypofibrinogenemia, it was found that from 6.0 to 12.7 grams of fibrinogen had been lost from the circulation. An average of 66 per cent of this fibrinogen was found as fibrin in the blood clots obtained from the uterus in these cases. It is pointed out that the amount of fibrin recovered was undoubtedly less than the total deposited within the uterine cavity. Fibrin in clots adherent within the uterus, and fibrin deposited in the placental intervillous spaces, would not have been recovered; also, fibrinolytic activity would have further reduced the recoverable portion.

Heretofore the most commonly proposed explanation for this hypofibrinogenemia has been that widespread intravascular coagulation follows the return of thromboplastin-rich blood from the decidua and placenta to the maternal circulation. If this is the major mechanism, however, it is difficult to explain the rarity with which fibrin emboli have been demonstrated to date in fatal cases of placental abruption with hypofibrinogenemia. Also, much less fibrin would be found in the uterine cavity, and intravascular fibrin deposits would be detected much more frequently. Although intravascular coagulation, as well as several other mechanisms, may play a part in the hypofibrinogenemia of placental abruption, it seems likely that the major mechanism is the loss of fibrinogen through hemorrhage and coagulation within the uterus at the site of placental separation, as demonstrated in this investigation.

Burn therapy: some controversial aspects

▶ Postwar ramifications in the problem of burn therapy are necessitating drastic revision in plans for the team treatment of burns, according to Lewis F. Ellmore, M.D., writing in *The Medical Clinics of North America,* July 1959. In this comprehensive discussion the author stresses questions which must be settled before clinical practices can advance materially. The problems are essentially those of internal medicine, and future advances must be along lines most familiar to internists: enzymology, immunology, and endocrinology. A "burn surgeon" functions primarily as an internist until homeostasis is achieved; later, while applying surgical technics, he still needs to call upon the principles of internal medicine.

Modern practice requires a comprehensive definition of a burn, including the following elements: age and sex of the victim, anatomic parts involved, nature of the thermal agent, duration of application of the thermal agent, circulatory state of the victim at the time of the burn (in some accidents the shock state may actually precede the burn, potentiating greater damage), and the bacterial environment of the victim. A burn should be classified according to these factors before any treatment is given. With regard to whether the "patient or the burn" should be treated first, the author's opinion is that in the management of major burns (those involving more than 10 per cent of the body) the patient should always be treated first except in the following instances: associated trauma which would prevent restoration of homeostasis; chemical eye burns, which may be flushed with water and treated with a sedative ointment; chemical burns, particularly those caused by hydrofluoric acid; and burn injuries requiring tracheotomy.

In the case of a severe burn, the successive pathologic stages are: primary and secondary shock, toxemia, sepsis (local or systemic), keloidal healing, and contracture. During the process the patient may develop renal failure, peptic ulcerations, thromboembolism, pulmonary edema, or scar carcinoma. Formerly most deaths were due to shock; now more patients survive the early stages only to succumb later. In treatment it is important to differentiate between primary shock and "burn shock," since the two states may require different management. Yet if treatment for burn shock is not instituted early, irreversible collapse may ensue. It is recommended that burn shock be described as (1) compensated hypovolemia (the sympathoadrenal state), and (2) uncompensated hypovolemia (collapse; "irreversible shock"). There are various theories regarding the mechanisms of burn shock, and one's convictions will influence his practices. For example, some physicians emphasize fluid and electrolyte replacement, others the use of plasma expanders, and still others the use of large quantities of whole blood. The early forced feeding of protein has been advocated, as well as the intensive use of corticosteroids. In the author's experience, the use of ACTH has not proved beneficial; on the contrary, fatal pulmonary edema was more often encountered in this connection. The mechanisms of toxemia are likewise in doubt; it is thought that elevation of the blood ammonia level results from failure of the hypoxic liver to deaminize ammonia. Inadequate fluid therapy may influence the development of renal disorders and the lower nephron syndrome. With regard to burn sepsis, there is evidence that the use of antibiotics has led to the "disconcerting frequency" of infections with hemolytic staph-

ylococci and Pseudomonas aeruginosa. This is perhaps a necessary evil, far outweighed by the benefits of antibiotic therapy; to offset it the surgeon must endeavor to be immaculate in his technics.

Differences of opinion on such matters as routine sedation, whole blood requirements, dextran versus plasma, fluid replacement formulas, and type of diet, lead to the conclusion that routine therapy based on acceptance of theory may be detrimental to the patient. The problems are summarized as follows: If irreversibility of shock is the result of adrenal exhaustion, the use of steroid hormones may intensify the shock state, or enhance the toxemia. If blood is used to excess, some may seep into the intestinal tract and eventually elevate blood ammonia levels. If not enough blood is used, hypoxia becomes pronounced. If undue emphasis is placed on the role of bacteria early in shock, resistant organisms may later cause serious local or systemic infection. Too much protein may support toxemia; too little may impair the metabolic status and the process of wound healing. Until better answers to such questions are available, wisdom suggests a middle course.

Evaluation of radioactive iodine (I^{131}) as a treatment for hyperthyroidism

► Radioactive iodine, although effective against hyperthyroidism, has the disadvantage of widely varied patient response, according to Carl E. Cassidy, M.D., and E. B. Astwood, M.D., reporting in *The New England Journal of Medicine* for July 9, 1959. Since no method has yet been devised for selecting a uniformly satisfactory and effective dose, the study reported here was undertaken to determine factors or influences that might lead to better understanding of individual variability.

Of 343 patients with hyperthyroidism treated with radioactive iodine from July 1949 to May 1957, 200 were observed for 1 to 7 years after completion of treatment, and these cases formed the basis for the study. The youngest patient was 21, the oldest 78; 42 patients were men. Normal thyroid function returned in 85.5 per cent of the patients, and permanent myxedema developed in 14.5 per cent. Sixty-five per cent responded to one dose, and after two treatments 89 per cent were cured of hyperthyroidism.

The method used to estimate dose did not yield better results than those obtained by other observers. Myxedema and multiple treatments were as frequent in women as in men. Patients having recurrent hyperthyroidism probably required a significantly larger number of treatments than previously untreated patients, but there was no significant difference in occurrence of myxedema in the two groups. Complete or nearly complete disappearance of the goiter was found to be a reliable index of the effectiveness of treatment. Among patients who received both antithyroid drugs and radioactive iodine, myxedema developed significantly less often than in those who received radioactive iodine alone. The fact that myxedema developed in several cases more than 2 years after treatment indicates that the frequency of myxedema increases with time.

The authors conclude that none of the factors analyzed explain the wide variation in sensitivity to radioiodine. They note, however, that radioiodine therapy is clearly superior to surgical treatment; although it shares the hazard of myxedema, there is no mortality, no vocal-cord paralysis, no tetany, and a negligible chance of recurrence. Radioiodine is indicated as definitive treatment in older patients, especially those with cardiac complications or with very large thyroid glands, and those who have relapsed after other forms of treatment. Antithyroid drugs seem better for children and for pregnant patients, and probably for patients with hyperthyroidism of short duration in which there is likelihood of lasting remission. The scope of radioiodine therapy would be extended if a more satisfactory program of dosage could be devised.

Management of acute peptic ulcer; measures to prevent recurrence

► Current concepts of peptic ulcer management show little departure from tradition, according to Gordon McHardy, M.D., Robert J. McHardy, M.D., and Donovan Browne, M.D., writing in *Postgraduate Medicine*, June 1959. Meticulous diagnostic investigation is the primary therapeutic requisite; treatment must be individualized and must conform to basic therapeutic principles. Exact management of early uncomplicated ulcer is essential as a prophylaxis against intractability, recurrence, chronicity, and complications. Notable changes in treatment are the combined aluminum hydroxide neutralizers, anticholinergic drugs, and possibly tranquilizers.

The authors' "healing ulcer program" is based on the concept that since recurrence of ulcer and gastric sensitivity persist, mechanical and chemical dietary irritants should be conscientiously avoided, medications taken, and supplementary rest sought until the ulcer has remained quiescent for 18 to 24 months. Medications include sedatives as individually required, and a well-tolerated, effective anticholinergic and antacid agent to be taken on retiring. Maintenance vitamins are required. The favored antacid is a combination of colloidal aluminum hydroxide and magnesium trisilicate or hydroxide. Various satisfactory anticholinergic agents are available; with these, symptomatic control is more prompt and complete, hospitalization is rarely needed, intractability is rare, and the incidence of recurrence during treatment is reduced. Tranquilizers have been helpful in sedation, particularly when barbiturates are not satisfactory. Additional measures of probable value in selected cases of peptic ulcer are: continuous intragastric milk drip, irradiation, group psychotherapy, and possibly ingestion of olive oil. Measures of unestablished value include: robaden, immune serum, injection of trigger areas, enzyme inhibitors, amino acids, antigizzard ulcer factors, procaine injection in the frontal lobes, histotherapy, and prolonged sleep therapy. Measures of no value include: enterogas-

trone, Kutrol, mucosal and submucosal extracts, various nonspecific proteins and vaccines, emetine, histidine, penicillin intragastric drip, cabbage juice, mucosal exfoliative procedures, almonds, and high carbohydrate diet.

The authors believe that most recurrences are related to therapeutic indifference on the part of the physician or patient or both, and that they can be prevented by better physician-patient cooperation. In a certain group, however, estimated as about 18 per cent, the disease will defy all therapeutic effort.

Review: The management of angina pectoris

▶ Angina pectoris due to ischemic heart disease is the subject of this review by Henri Chevalier, M.D., and Jacqueline Simon, M.D., in the *American Heart Journal*, July 1959. Although there are many anatomic causes of angina pectoris, coronary atherosclerosis is by far the most common, and the whole problem can be summarized under the one main etiologic disease—coronary atherosclerotic stenosis. The common denominator of the various clinical entities resulting in angina is the disproportion between the needs of the heart for oxygen and the inadequate supply of blood.

The authors emphasize the need to distinguish between treatment of the anginal attack itself and prophylactic treatment of the anginal attacks. The "magic" drug nitroglycerin, first used in 1879, still represents the entire treatment for relief of the anginal paroxysm. Although its effectiveness is beyond question, there is still no way to prevent the recurrence of the paroxysms—that is, to control the cause itself of the symptom angina. The efflorescence of chemical, physical, psychiatric, and surgical methods which have been proposed is an unmistakable sign of the physician's helplessness when confronted with the disease. It cannot be claimed that a real prophylactic treatment has been discovered so long as its basic causes remain unknown and a method is not found to arrest the development of the basic process. Nevertheless, useful medical help must be offered to coronary patients, and to simplify the discussion of current principles the authors have placed the clinical problems in three general categories.

1. For patients with chronic, inactive angina pectoris with a fixed level of diminished coronary reserve, not one medication has demonstrated its usefulness. The patient's survival depends on his ability to avoid physical and emotional stress, to accept a restricted diet and the suppression of tobacco, and above all to comprehend and live peacefully with his chronic disease.

2. In severe, evolutive angina pectoris due to intense and prolonged subacute coronary insufficiency, the treatment is the same as for myocardial infarction —complete bed rest, oxygen therapy, anticoagulants, opiates, and sedatives. During this phase of impending infarction an acute coronary thrombosis may occur; the evolutive phase may subside after some weeks or months; in rare cases, the evolutive phase may persist and develop into intractable angina pectoris.

3. Intractable angina pectoris, in which the coronary reserve is hardly sufficient for the minimal metabolic needs of life, is characterized clinically by a chronic status anginosus. The so-called "heroic" treatments of angina may be beneficial: surgical myocardial revascularization, production of hypothyroidism by radioactive iodine, or as a last resort, cardiac denervation by various procedures, the most effective apparently being the bilateral section of the upper four thoracic spinal roots.

It is concluded that the management of angina pectoris differs radically according to the phase of the atherosclerotic coronary process. In the inactive phase the physician's job is mainly to restore confidence and offer general counsel, without loading the patient with medical prescriptions of doubtful efficacy. The evolutive and chronically severe cases give rise to difficult and entirely different problems that must be handled on an individual basis, according to the physician's careful selection among the numerous therapeutic methods available.

Solitary unicameral bone cysts

▶ Six cases of solitary unicameral bone cyst, in which the lesion occurred in both common and uncommon locations, form the basis of this report by Willard E. Dotter, M.D., in *The Surgical Clinics of North America*, June 1959. Although the lesion was originally described as being located in the "long pipe" bones, it has since been reported as occurring in other bones as well. Among the 6 cases presented here, 4 involved the humerus, 1 the neck of the femur, and 1 the transverse process and lamina of the first thoracic vertebra. The youngest patient was 19 months old, the oldest, 45 years. In all 6 cases the lesions were curetted, and in 3 the humeral lesions were grafted (1 regrafted) with subsequent healing in all cases.

Although solitary unicameral cysts are usually diagnosed after trauma to the bone, the physical factors of trauma seem to have no connection with the cause of the cyst. The etiologic basis is as obscure now as it was when the first report appeared in 1910. The frequent occurrence of the lesion in the humerus is difficult to explain on the basis of anatomic structure; however, such incidence may be related to the higher incidence of trauma to the upper extremities during the active years of childhood and adolescence. Although the solitary unicameral bone cyst is a definite pathologic entity, the diagnosis is usually established only on the basis of the absence of other pathologic characteristics. The paucity of microscopic findings and the lack of specific blood or cyst fluid chemical changes attest to the benignity of the scopic findings and the lack of specific blood or cyst the latter type of cyst, however, is generally extracortical and on microscopic examination displays vascular lakes and metaplasia of fibrous tissue which are signs of activity.

BOOK REVIEWS

► *Books for review which were received during the period from August 5 to September 5 are listed on advertising pages A-216 and A-217. Reviews of these books will be published as space permits.*

► A TEXT ON SYSTEMIC PATHOLOGY. Volumes 1 and 2. Edited by Otto Saphir, M.D., Director, Department of Pathology, Michael Reese Hospital, Chicago, Illinois; Clinical Professor of Pathology, University of Illinois College of Medicine; Consultant to the Armed Forces Institute of Pathology. Cloth. Pp. 1950, with illustrations. Price $58.00. Grune & Stratton, 381 Fourth Ave., New York, 1958.

There are many textbooks of pathology, but few are written for the working pathologist in the hospital laboratory. Most are directed to the undergraduate medical student who must master first the basic principles of his course, and then become acquainted with the more common and important systemic lesions. Indeed, the space required for the presentation of general pathology practically dictates that the sections on systemic disease be limited to the more common lesions. Herein lies the crucial defect of most general pathology texts for a man of postgraduate level: Regardless of the capabilities of the author, the presentation of systemic disease must be telescoped to fit within the confines of a moderate-sized volume.

The two-volume *Text on Systemic Pathology,* edited by Dr. Otto Saphir, is a welcome addition to the literature of pathology. In its stated purpose—that is, to make readily available information to assist in the solving of the perplexing problems that daily confront the hospital pathologist—it has admirably succeeded.

It is devoted entirely to a survey of systemic disease. While any such work must necessarily follow a more or less standard format, it is not to be considered as merely another text on the subject. It is filled with many personal comments and observations by the individual contributors—comments which reflect their long experience and add practical value lacking in the more didactic presentations.

Although there are eleven contributors to the volumes in addition to Dr. Saphir, the text is consistently readable throughout and easily understandable, a feat for which the editor is to be gratefully congratulated. Dr. Saphir lists himself as editor of the text, but he has personally written ten of the twenty-three sections (The Heart, The Vascular System, The Respiratory System, The Mediastinum, The Urinary System, The Female Genital System, The Male Genital System, The Alimentary Tract, Liver, Gallbladder and Bile Ducts, The Pancreas, and Peripheral Nerves). He is also listed as the coauthor of three others in association with Dr. Paul B. Szanto (Oral Cavity, Pharynx, Naso-Pharynx, Branchial Apparatus and Salivary Glands, The Nose and Paranasal Sinuses, and The Ear). The remaining portions are presented by colleagues who have in some manner been associated with Dr. Saphir over the years. This association has lent a continuity and evenness of pattern that is truly remarkable when one considers the number of personalities involved. Such evenness of presentation is not, however, to be considered detrimental to the text. The volume is not intended to be a controversial work, and while occasional differences are noted, they are minor rather than major in nature.

The other contributors and their subject matter are as follows: Dr. Maurice Lev, Congenital Heart Disease; Dr. Ira Gore, The Hematopoietic System; Dr. Jay J. Gold, Hermaphroditism and Pseudohermaphroditism; Dr. Arkadi M. Rywlin, Teeth; Dr. Laurenz E. Zimmerman, The Eye and Ocular Adnexa; Dr. Max Appel, The Endocrine Glands; Dr. Martin Swerdlov, Skin; Dr. George D. Amromin, Bones, and Joints, Synovia and Tendon Sheaths; Dr. Albert I. Rubenstone, Striated Muscle; and Dr. Jacob L. Chason, Brain, Meninges and Spinal Cord.

The photomicrographs are profuse in number and of uniformly excellent quality. In only a few instances, to be noted below, illustrations are lacking in places that would have been greatly enhanced by their inclusion. A second criticism is that although the photographs are numbered, no reference to these numbers is made in the text. This does create some confusion in attempting to correlate a specific photograph with the textual material, or vice versa.

It was also a great personal pleasure to see that that group of lesions known as hamartomas received the distinction of individual comment wherever applicable. These are indeed curious lesions, occupying a shadowland between malformations and neoplasms, and have been regarded as mere curiosities for too long.

In a work of this nature, it is tacitly assumed that the reader already possesses much basic information and that the desired features are the further exposition of this information in the light of the experience

and knowledge of the individual authors, as well as bringing together an up-to-date accounting of the material itself. Therefore an exhaustive survey of each of these twenty-three chapters will not be attempted, but rather brief mention will be made of the material most personally interesting to this reviewer.

The Heart. The classic discussion of cardiac lesions according to primary site of involvement is altered here in favor of a more unified approach, in which the entire heart is regarded as a functional unit, various areas of which undergo disease processes or degeneration. Thus while the general subject matter is more or less standard, the presentation is refreshingly new. Local pathologic lesions are not ignored, however; there are excellent discussions of the various patterns of valvular and endorcardial lesions. Here, as throughout the text, the photographs are excellent and especially helpful. The subject of myocarditis is well covered and represents an excellent discussion of a traditionally ill-defined and usually abbreviated subject. More than usual space is devoted to tumors of the heart, and special reference is given to the questionable etiology of the so-called cardiac rhabdomyoma. Circulatory diseases of the heart are also discussed in this chapter.

Congenital Heart Disease. In this chapter the various anomalies of the heart are treated in systematized fashion, first individually and then as associated complexes. A great deal of the value of the chapter rests in the excellent photographs it contains.

The Vascular System. Most notable here is the distinction Dr. Saphir draws between arteriosclerosis, atheromatosis, and atherosclerosis, presenting a new and more strict classification based upon the author's personal experience and opinion as well as on a critical study of the pertinent literature. Although not strictly official, there is much to recommend it and certainly it sharpens the distinction between several apparently similar and yet different pathologic processes.

The Respiratory System. The presentation of the various lesions of the respiratory system is excellent, although it is difficult to single out one particular feature. The greatest space, 19 pages, is devoted to pulmonary tuberculosis in its various forms, and to the granulomatous processes, 14 pages, which are becoming of more and more clinical importance.

Urinary System. A goodly portion of this section is devoted to a discussion of the poorly understood but often discussed subject of the nephroses. There is a good summarization of the varied etiology, the latest concepts of altered physiology, and the actual pathologic lesions themselves. There is also good mention of the smaller and less obvious lesions of the kidney: the tiny neoplasms, maldevelopments, and hamartomas that are often so difficult to classify and to interpret. This subject is well summarized and, although it occupied only a few pages of text, was of extreme interest.

Female Genital System. This section occupies 300 pages, the greatest length of any chapter in the work. This is understandable in view of the several organs involved and the volume of surgery devoted to this area. With regard to the uterine cervix, there is an excellent review of the concepts of the carcinoma in situ. This is an extremely troublesome lesion, and the problems relative to diagnosis and therapy are discussed in a refreshingly unbiased manner. Dr. Saphir's general classification of breast tumors seems to the reviewer to be superior to those which "have only locally descriptive and not classificatory value." Certainly here is an area where strict classification is essential if the survival rates for the various surgical technics are to be correlated with a histologic diagnosis. His classification of the intraductal papillomata also bears further study especially, again, with regard to the surgical approach to the various histologic forms. Several observations on ovarian neoplasms—especially the cystadenomas, with their tendency to peritoneal seeding—are well taken in connection with documented postsurgical follow-up, and certainly are worthy of further thought.

Alimentary Tract. In this section the review of lesions of the stomach seemed the most interesting. Especially so was the inclusion of ruptured primary aneurysm of the gastric arteries and gastroesophageal laceration as possible causes of gastric hemorrhage. It is not often that surgical or autopsy exploration will not reveal an obvious lesion responsible for profuse gastric hemorrhage, but every one with moderate experience has at some time encountered a situation where no such gross abnormalities could be demonstrated. Here are at least two other conditions to be looked for and which will undoubtedly in some instances account for a hemorrhage which otherwise would have to be listed as idiopathic.

The account and description of chronic atrophic and hypertrophic gastritis is good, although it is short in extent; the contributor's comments about the condition are most interesting. It is regrettable that in a text generally so well illustrated that no photomicrographs are presented in this section to complement the textual material. The author's comments concerning the frequency of gastric leiomyomas and neurofibromas, with the preponderance of the latter as judged by special staining procedures, is surprising, as well as his views on the essentially benign character of the gastric polyp.

Endocrine Glands. The introductory comments about diseases of the thyroid gland are extremely well put, and certainly should be reviewed by any student beginning his first survey of this organ. There is also a new and simplified classification of thyroid tumors which is most welcome.

The section on lesions of the hypophysis suffers somewhat from a lack of photomicrographs. Opportunities to study the hypophysis are necessarily limited, and certainly further interest in this organ could be stimulated by suitable illustrations to accompany the text.

Organs of Locomotion. Subsection C of this chapter is devoted to the pathology of the striated (skeletal) muscle. This is an area that has until recently been a *terra incognita* to the general pathologist—or at best a poorly understood and neglected field. However, the recent reawakening of interest in

muscle pathology as well as the practicality of muscle biopsy technics requires that the pathologist devote more attention and study to this area.

Again, the success of the presentation depends to a large extent upon the organization of the material, and the etiologic classification employed serves this purpose well. The material itself is clearly presented and will serve as a good basis for any future studies on the subject.

Hematopoietic System. The section on hemorrhagic disorders was of special interest because of the excellent classification presented. The text unfortunately does not follow the outline closely, nor is it of great length (5 pages). The problems presented in hemorrhagic disorders are almost always perplexing ones, and a hematologist cannot always be present to shoulder the responsibility. The discussion here outlines the general etiologic possibilities quite well, but it could have been greatly strengthened by lengthening the text and adding more specific features.

The bibliography presented at the end of each section is most complete, and offers extensive opportunities for further investigation of the materials presented.

This text—long overdue in the field—should certainly find a place on every pathologist's bookshelves, and in addition should be available for consultation in the library of every osteopathic hospital. Because of the large amount of general and clinical information the book contains, it should prove of considerable value to the internist and general practitioner as well.

MORRIS R. OSATTIN, D.O.

► AN ATLAS OF THE COMMONER SKIN DISEASES. With 153 Plates Reproduced by Direct Colour Photography from the Living Subject. By Henry C. G. Semon, M.A., D.M., Oxon., F.R.C.P., London; Consulting Physician for Diseases of the Skin, and former Lecturer to Postgraduates, Royal Northern Hospital; Consulting Dermatologist, Hampstead and North-West London General Hospital; Ex-president and Vice-president, Dermatological Section, Royal Society of Medicine; Corresponding Member of the Societe Fracaise de Dermatologie et Syphilologie; Medaille d'Honneur de l'Assistance Publique, Republique Francaise; Medical Referee for Industrial Dermatitis, Ministry of National Insurance; Revised with the collaboration of Harold T. H. Wilson, M.A., M.D., Cantab, M.R.C.P., D.T.M., Dermatologist and Lecturer to Postgraduates, Royal Northern and Central Middlesex Hospitals; Dermatologist, Mount Vernon Hospital, Northwood, Wimbledon, and Highland Hospitals; Colour Photography originally directed by the late Arnold Moritz, B.A., M.B., B.C. Cantab. Ed. 5. Cloth. Pp. 375, with illustrations. Price $20.00. Williams & Wilkins Company, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, 1957.

A book which is in its fifth edition must hold a vast appeal. These editions have covered a period of 23 years, and recently there has been a Spanish translation. An obvious point in favor of the book is that "a picture is worth a thousand words." The book contains 153 photographic plates. The majority are superior color reproductions, though occasionally there is a need for improvement both in content and reproduction.

On the whole, the lesions of the skin which are pictured are typical for the disease; however, the author cannot help being a typical dermatologist and periodically sneaking in one which is unusual. For example: Rather than showing the usual molluscum contagiosum which one would see in ordinary practice, the plate shows the giant type.

Because this book is British in origin, the terminology is also British. For example, lesions which we would call the keratoacanthoma with the synonym of molluscum sebaceum, are in this text called molluscum sebaceum with keratoacanthoma as second choice.

In connection with the text itself, it might be noted that the use of some of the older etiologic possibilities, such as unerupted wisdom teeth as an etiologic agent in acne, and the possibility of dental sepsis as the cause of alopecia areata, are probably passé in present-day thinking.

A source of more confusion to the American reader would be the terminology used for the medications. An American pharmacist would be at a loss to fill a prescription for Cignolin or Dithranol. Other prescription names would be of less importance; terms such as those in the barbitone group, and surgical spirits, could be readily converted into our terminology.

In discussing this book with men in general practice who have used previous editions for many years, I discovered that its chief appeal has been that it enables them to sit down and stimulate their own thinking by matching processes with diseases that they have seen in their own offices.

The book is of use chiefly to the man in general practice. It would appeal to the dermatologist not as a basic treatment text, but as a curio on British diagnosis and treatment.

A. P. ULBRICH, D.O.

► THE EYE. A Clinical and Basic Science Book. By E. Howard Bedrossian, B.S., M.D., M.Sc. (Med.), F.A.C.S., Assistant Professor of Ophthalmology in the Graduate School of Medicine of the University of Pennsylvania, Philadelphia, Pa.; Assistant Surgeon, Wills Hospital, Philadelphia, Pa.; Associate Ophthalmologist, Graduate Hospital, Philadelphia, Pa.; Chief of Ophthalmology, Delaware County Hospital, Drexel Hill, Pa.; Fellow, The American College of Surgeons; Fellow, Philadelphia College of Physicians; Fellow, The American Academy of Ophthalmology and Otolaryngology; Fellow, Aero Medical Association. Cloth. Pp. 340, with illustrations. Price $11.00. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1958.

The outgrowth of a teacher's notebook, this hard-bound manual still adheres to outline form. This enhances its importance as a study guide as well as a quick desk reference for the practicing ophthalmologist. The material is arranged in a logical manner and contains information which the average eye specialist finds difficult to remember. The Contents pages themselves consistently follow the outline form; the main chapter headings are: Embryology, Anatomy, Pathology, Physiology and Biochemistry, Optics, External Diseases, Diseases of the Inner Eye, Neuro-Ophthalmology, and Ocular Emergencies and Injuries. For the student studying for board exam-

inations, the chapters covering the basic sciences are of valuable help. The clinical section is "a collection of useful diagnostic and therapeutic information, condensed from leading textbooks, periodicals, journals, and from the author's own lecture notes." As a final recommendation, Dr. Bedrossian outsteps modesty for a moment to mention that he himself finds the book "invaluable in his everyday practice."

▶ SYSTEM OF OPHTHALMOLOGY. Volume 1. The Eye in Evolution. Edited by Sir Stewart Duke-Elder, G.C.V.O., M.A., LL.D., Ph.D., D.Sc., M.D., D.M., F.R.C.S., F.R.C.S.E., F.A.C.S., F.R.A.C.S. Cloth. Pp. 843, with illustrations. Price $27.50. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, 1958.

This book, which is Volume I of the successor to Duke-Elder's *Textbook of Ophthalmology*, represents an expansion of only the first 20 pages of the old work. As the subtitle will indicate, it deals largely with the evolution of the visual apparatus. It is divided into four major parts: The Effect of Light on Living Organisms; The Evolution of the Visual Apparatus; The Function of the Eyes of Animals; and Evolutionary By-ways.

Obviously this volume will in itself have a limited audience. However, the total set, which will comprise 15 volumes, will constitute a complete review of at least one school of thought in ophthalmology. Sir Stewart Duke-Elder has enlisted the help of his colleagues at the Institute of Ophthalmology in London to share with him the burden of preparation of the succeeding volumes in this series. Certainly the specialist in the diseases of the eye will receive this book and its companions with interest; the set represents a major contribution to the field.

▶ ANATOMY FOR SURGEONS: Volume 3. The Back and Limbs. By W. Henry Hollinshead, Ph.D., Professor of Anatomy, Mayo Foundation, University of Minnesota; Head of the Section of Anatomy, Mayo Clinic, Rochester, Minnesota. Cloth. Pp. 901, with illustrations. Price $23.50. Paul B. Hoeber (Medical Book Department of Harper & Brothers), 49 East 33rd Street, New York 16, 1958.

The three-volume work *Anatomy for Surgeons*, of which this is the third part, is without doubt a major contribution in that field of specialty training. It is not intended to be a complete descriptive anatomy; however, it presents to the younger surgeon a review of the broad basic principles he learned in his preparatory classes. Its more important objective is to discuss the details upon which the more mature surgeon consciously or unconsciously bases his daily work.

This book, then, will have value both for the surgical trainee and for the more mature surgeon who needs a refresher course in details which seem slightly afield from his specialty. It has been a particular objective of the author to present the very fundamentals of anatomy, especially those details not so easily seen at the operating table. Knowledge of or access to these fundamental details makes it possible for the young surgeon to have assurance that his own clinical experience will be firmly founded.

The author did not attempt to verify so prodigious an amount of facts by his own research alone. After each of the chapters was written, it was submitted to an associate at the Mayo Foundation or the Mayo Clinic for a careful and critical reading. Each of these readers was a specialist in the particular field with which the chapter dealt. He offered suggestions for making the text of maximum usefuless and for bringing it up to date.

Much more could be said about this important work, but the surgeons and aspiring surgeons who will form its audience will discover all they need to know as they peruse it for themselves.

▶ TEMPORAL LOBE EPILEPSY. A Colloquium Sponsored by the National Institute of Neurological Diseases and Blindness, National Institutes of Health, Bethesda, Maryland; In Cooperation with the International League Against Epilepsy. Edited by Maitland Baldwin and Pearce Bailey. Co-Editors, Cosimo Ajmone-Marsan, Igor Klatzo, and Donald Tower. Cloth. Pp. 581, with illustrations. Price $15.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1958.

The Proceedings of the Second International Colloquium on Temporal Lobe Epilepsy are recorded in this book. Papers and discussions presented by the eminent neurologic scientists who participated in this Colloquium are recorded almost directly as they occurred. Anyone interested in this form of epileptic seizure will certainly wish to peruse this book, with its highly specialized treatment of various phases of the problem. It seems to be well edited, and its illustrations and documentation are excellent; this insures the combined factors of authority and ease in reading.

▶ PATHOLOGY FOR THE PHYSICIAN. By William Boyd, M.D., Dipl. Psychiat., M.R.C.P. (Edin.), Hon. F.R.C.P. (Edin.), F.R.C.P. (Lond.), F.R.C.S. (Can.), F.R.S. (Can.), LL.D. (Sask.), (Queen's), D.Sc. (Man.), M.D. (Oslo); Professor Emeritus of Pathology, The University of Toronto; Visiting Professor of Pathology, The University of Alabama; Formerly Professor of Pathology, The University of Manitoba and the University of British Columbia. Ed. 6. Cloth. Pp. 900, with illustrations. Price $17.50. Lea and Febiger, Washington Square, Philadelphia 6, 1958.

It is always an event when a major revision of a standard work is released to the reading public. Such is definitely the case with this book, long the desk-mate of many physicians. The extensive nature of the revision is immediately evident. Even the name has been changed from *The Pathology of Internal Diseases* to the present title; the author gives his reason as a wish "to present pathology as a sum total of its parts rather than the pathological changes in the organs in 'internal diseases' whatever those may be." It might be noted in passing that this is in accord with a current trend toward holistic medical practice, an ideal long held by our profession.

Other than an over-all revision the reader will

note that new chapters have been added on the diseases of the muscles and the internal environment, and on diseases of the joints. The chapter on the kidney has been placed in closer proximity with that on the heart and arteries because of the increasingly close correlation that has been noted between cardiovascular and renal diseases.

The author notes that this new edition, more than its predecessors, is written to serve as a companion to his own *Pathology for the Surgeon.* In this, he admits to a certain amount of overlapping and justifies it rightly by indicating the dim borderline between the fields of medicine and surgery. He further indicates that "a clinical-pathological conference worthy of the name does not consist merely in the presentation of two sides of a problem, but in bringing them together so that the one will explain the other."

► BONE TUMORS. By Louis Lichtenstein, M.D.; Chief Pathologist, General Medical and Surgical Hospital, Veterans Administration Center, Los Angeles; Fellow, New York Academy of Medicine; Profesor Extraordinario, National University of Mexico; Consultant in Bone Tumors, Tumor Tissue Registry of California Medical Association Cancer Commission; Consultant in Pathology, Los Angeles County Hospital; Consultant, City of Hope Medical Center. Ed. 2. Cloth. Pp. 402, with illustrations. Price $12.00. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, 1959.

Changes in this new edition of Lichtenstein's popular monograph may be summarized as follows: A chapter directed to clinicians and pathologists has been added to give guidance in the management of bone lesions that may be tumorous. There is an additional chapter on tumors of periosteal origin, and a discussion on tumors of synovial joints, bursae, and tendon sheaths has been added to the appendix. The discussion which dealt with differential diagnosis of non-neoplastic lesions which might be mistaken for tumors has also been considerably amplified. Additional illustrations have been added and nearly every chapter has been partially modified. Physicians who are already familiar with this fine work will receive its revision as another means for keeping their postgraduate studies up to date.

► NEWER CONCEPTS IN CLINICAL PROCTOLOGY. By Frank D. Stanton, D.O. Cloth. Pp. 364, with illustrations. The Colonial Press, Clinton, Mass., 1958.

Thomas Huxley once said, "Sit down before fact as a little child; be prepared to give up every preconceived notion; follow humbly and blindly wherever Nature leads you or you shall learn nothing." With this epigram in mind the author of this fairly small new book on proctology has endeavored to simplify what has previously been a complex field. He has approached his subject from a clinical view rather than basing it primarily on library research. The book is intended for a teaching text and for a review of the subject by practitioners whose daily practice is not primarily that of proctology.

He submits a number of approaches and ideas, many of which are unique to this work. They include the following:

1. A postulate of the part played by foreign bodies within the anal crypts, creating the portal of entry through which infection invades subjacent tissues.
2. A concept of the origin, behavior and extension of proctologic abscesses and fistulas.
3. A classification of five basic types of anorectal abscess and fistula.
4. The specific treatment of each of the five types of abscess and fistula.
5. Identification of the area located posterior to the external sphincter muscle between the posterior extension or legs of the muscles and the pubococcygeous muscle in their course backward to the coccyx and sacrum, as the usual path of extension and transmission in development of deep abscess and fistula; the anococcygeal, ischiorectal and retrorectal types.
6. Identification and rationalization of the origin, development and location of retrorectal abscesses as regularly encountered in proctologic practice, including diagnosis and treatment.
7. A simplified method for the removal of pilonidal sinuses.
8. A classification of hemorrhoids, including indications and contraindications for injection treatment.
9. Methods of hemorrhoidectomy as employed in the treatment of both office and hospital patients.
10. The injection treatment of hemorrhoids using quantities of solutions many times greater than have been employed previously.
11. The cause of slough following injection treatment of hemorrhoids, which was determined more than twenty-five years ago.
12. A simplified method of anesthesia by local infiltration and block without the necessity of injection into the musculature, developed more than twenty-five years ago.

This book deserves attention for its originality. Certainly what the author has tried to do is most commendable—that is, to simplify the everyday treatment of proctologic lesions.

► MANUAL OF DIFFERENTIAL DIAGNOSIS. By William C. Matousek, M.D., Chief, Medical Service, Veterans Administration Hospital, Miles City, Montana. Cloth. Pp. 352. Price $8.00. Year Book Publishers, Inc., 200 East Illinois Street, Chicago, 1959.

Differential diagnosis seems to challenge many writers, if one may judge by the number of books published on the subject. This book is smaller than most but well organized. The 74 subject listings are quite general; for example, under "A" the topics included are: Abdominal Distention, Abdominal Masses, Acute Abdominal Pain, Altered Appetite and Altered or Abnormal Weight, and Amenorrhea. For each subject there is an outline of possible causes for the clinical manifestation as well as a discussion which indicates as precisely and clearly as possible the factors involved in differential recognition. References for additional study are minimal; however, this was not meant to be a study guide but primarily a manual for on-the-spot identification of clinical syndromes.

In choosing his own manual of differential diagnosis the physician must inevitably place several side by side and make a choice according to personal taste. This book can be recommended as one of those to be considered.

FOR TUBE FEEDING WHERE ADEQUATE PROTEIN INTAKE IS INDICATED

Gerber Meat Base Formula

Nutritionally adequate. Gerber Meat Base Formula is ideal for tube feeding because it provides high quality proteins, fats, carbohydrates, vitamin D and minerals in proper proportion. Levels of these nutrients may be increased by the addition of eggs, extra non-fat milk, cream or a fat emulsion.

Well tolerated. Gastrointestinal disturbances are seldom observed after tube feedings with Gerber Meat Base Formula, when prepared according to our suggested basic formula.*

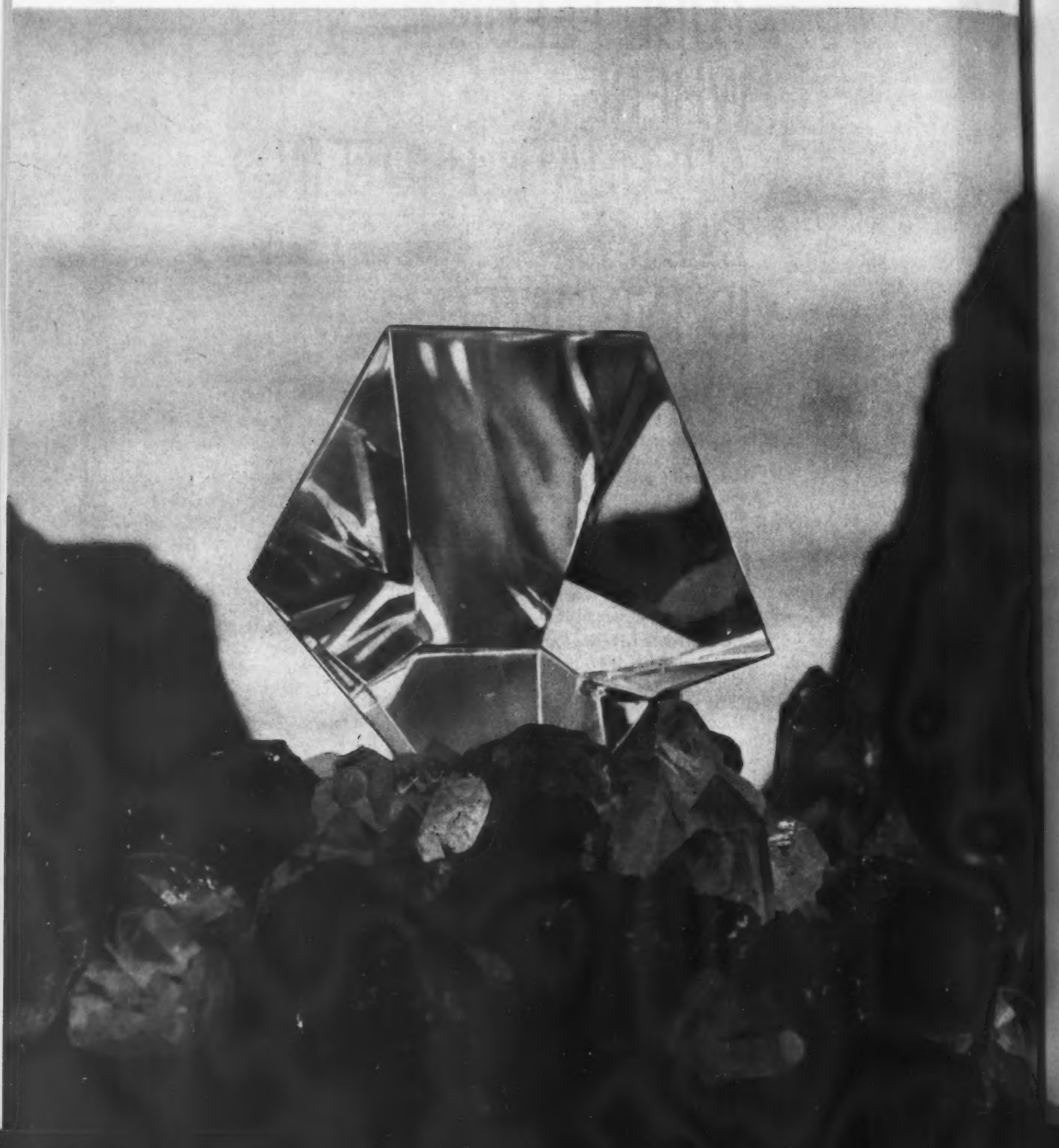
Economical! The cost per gram of protein is appreciably less than that of many of the protein hydrolysates and other special preparations offered for tube feeding.

Easy to use. Meat Base Formula is homogenized to assure uniformly fine division, dispersion of ingredients and miscibility with added fluids. Suitably diluted, it flows freely.

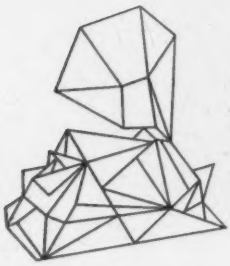
**For copies of suggested basic tube feeding formula, write on your letterhead to: Gerber Products Company, Professional Services Dept., Fremont, Michigan.*

Gerber Baby Foods FREMONT, MICHIGAN

PURE ANTIHISTAMINE ACTION NOW A PHARMACOLOGIC FACT BECAUSE DĪSOMER SHEDS THE MOLECULAR DROSS



NEW...IN THE TREATMENT OF ALLERGIC DISORDERS



- *"...high therapeutic index"*[1]
- *unsurpassed clinical efficacy*
- *highly effective in exceptionally small doses*
- *side effects reduced to placebo level*

Disomer....a major scientific advance in the pharmacology of antihistamines!

DISOMER was described as being *"...as close to a pharmacologically pure form of histamine antagonist as the chemist can produce."*[1] Incorporating the newest knowledge of structure-function relationships, DISOMER comes closest thus far to the therapeutic ideal of pure antihistamine activity. DISOMER represents the *d*-isomer of racemic brompheniramine maleate. In shedding the *l*-isomer a high point in clinical effectiveness is achieved while side effects are reduced to the placebo level.

Therapeutic results have been noteworthy with 94.7% effectiveness reported.[2] Equally noteworthy is the virtual absence of clinically significant adverse reactions. Indeed, the sole side effect reported was occasional, mild drowsiness in only 4.7% of patients.

With DISOMER your allergic patient remains your alert patient while enjoying unsurpassed freedom from allergic symptoms. Ready now for your prescription—DISOMER is available in a variety of dosage forms to fit your patients' individual requirements.

Availability:

DISOMER CHRONOTAB*	6 mg.
DISOMER CHRONOTAB*	4 mg.
DISOMER Tablets	2 mg.
DISOMER Syrup	2 mg. per 5 cc.

Usual dosage:

6 mg. CHRONOTAB	b.i.d.
4 mg. CHRONOTAB	t.i.d.
2 mg. Tablet	q.i.d.
Syrup 1 teaspoonful	q.i.d.

**Chronotab* is White's repeat-action tablet.*

References: (1) Gould, A. H. and Long, D. L.: Clinical Pharmacology and Therapeutic Use of Dexbrompheniramine Maleate (Disomer), a new Histamine Antagonist (submitted for publication). (2) Medical Department, White Laboratories, Inc.

WHITE LABORATORIES, INC.
Kenilworth, New Jersey

White's

DISOMER

DEXBROMPHENIRAMINE MALEATE

...sheds the molecular dross

In Upper Respiratory Infections

Nothing relieves nasal congestion like Tyzine®

brand of tetrahydrozoline hydrochloride

95% RECORD OF CLINICAL SUCCESS IN 2,576 PUBLISHED CASES[1-6]
RELIEF UP TO 6 HOURS OR LONGER AFTER ONE ADMINISTRATION
VIRTUALLY NO STING OR BURN · NO REBOUND CONGESTION

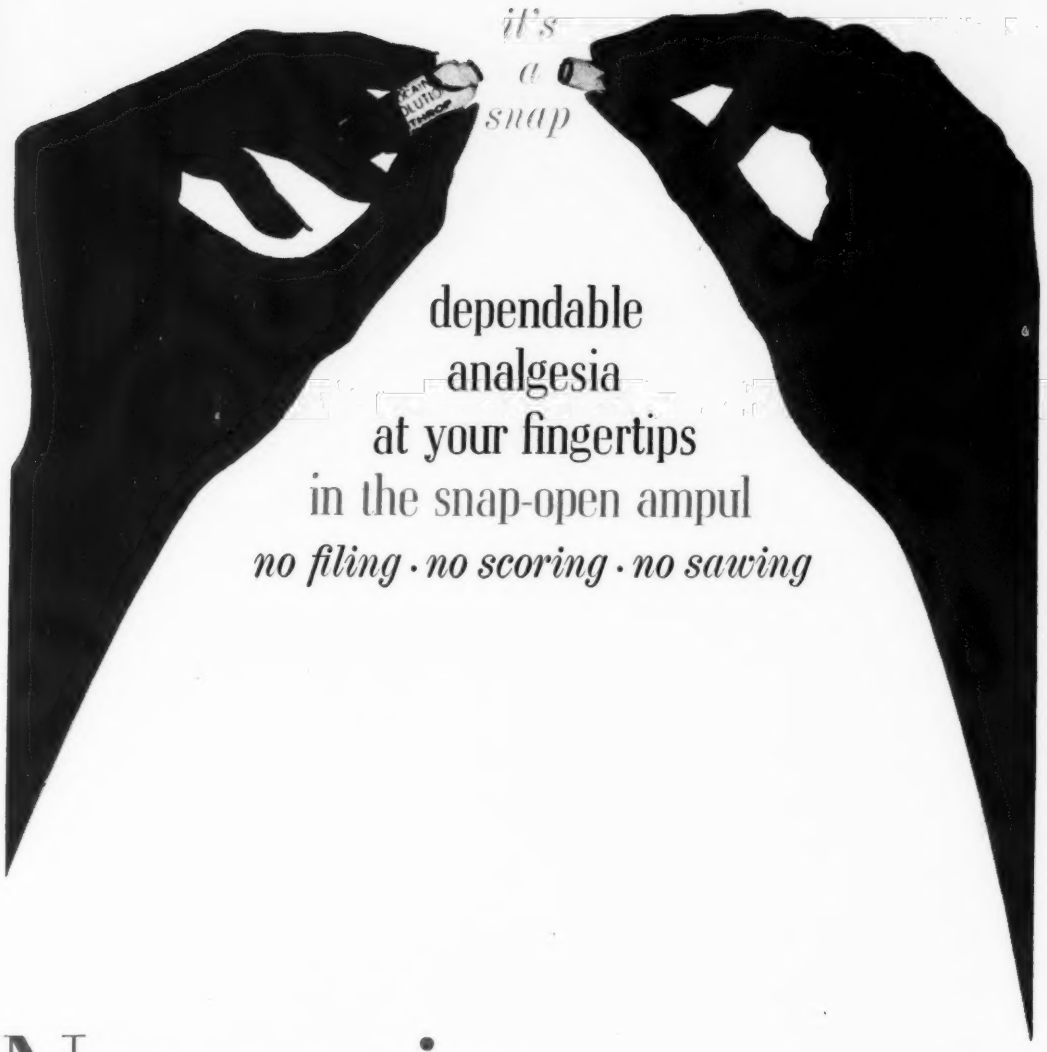
Note: As with certain other widely used nasal decongestants, overdosage may cause drowsiness or deep sleep in infants and young children; Keep out of reach of children of all ages. Use Pediatric Nasal Drops (0.05%) for children under six years.

Professional Information Available on Request

TYZINE LABORATORIES
Division, Chas. Pfizer & Co., Inc.
Brooklyn 6, New York

1. Monger, H. C.: New York J. Med. 56:1279, 1956. 2. Face, W. V.: Mil. Med. 123:34, 1958. 3. Kravis, T. C.: M. Times 86:1232, 1958. 4. Anderson, R. A.: Antibiotic Med. 3:199, 1956. 5. Graves, J. W.: Eye, Ear, Nose & Throat Month. 34:670, 1955. 6. Serrano, M. L.: Revista M. C. 110:19, 1956. 7. Neuhoff, L. R.: A.M.A. Arch. Otolaryng. 67:142, 1958. 8. Olivo, I. A. and Carlozzi, M.: Eye, Ear, Nose & Throat Month. 35:89, 1956. 9. Perun, T. A.: M. Times 87:417, 1959.

Pfizer *Science for the world's well-being*™



dependable
analgesia
at your fingertips
in the snap-open ampul

no filing · no scoring · no sawing

Novocain®

PIONEER BRAND OF PROCAINE HYDROCHLORIDE

the local anesthetic with universal acceptance

Novocain 1%, 2%, 10%, 20% Solutions with or without vasoconstrictors.
***Also available: Multiple Dose Vials* with dual purpose caps for withdrawal by needle or pouring.**

Winthrop LABORATORIES, NEW YORK 18, N.Y.

JUST AS A REMINDER

4 E.N.T. products to remember!

AURALGAN
EAR DROPS

IN ACUTE OTITIS MEDIA
SAFE AURALGESIC
AND DECONGESTANT

O-TOS-MO-SAN
BACTERICIDAL – FUNGICIDAL

BROAD-SPECTRUM
THERAPY WITHOUT
ANTIBIOTICS

RHINALGAN
NASAL SPRAY

SAFE!
"NOT JUST ANOTHER
DECONGESTANT"

LARYLGAN
THROAT SPRAY | GARGLE | SWAB

FOR INFECTIOUS
AND NON-INFECTIOUS
THROAT INVOLVEMENTS

DOHO CHEMICAL CORP., 100 VARICK ST., NEW YORK 13, N.Y.

High-Speed . . . . . DEPENDABLE PRESSURE STEAM STERILIZATION

AMERICAN STERILIZER
613-R PORTABLE DYNACLAVE

● The low cost, high performing American 613-R Dynaclave assures positive sterilization with pressure steam at 250°F. or 270°F. It is fast, reaching 270° F. in approximately seven minutes.

Operation is fully automatic with selective sterilizing cycles from 3 to 60 minutes. Cools and dries instruments or supplies by exhausting steam and residual water back into water reservoir—NOT into room.

The 613-R, with greater capacity, accommodates three large trays (6″ x 13″). Handsome, all stainless steel construction is durable and easy to clean. Other features include a Safety-Lock Door, Adjustable Thermostat and Accurate Temperature Gauge. Automatically burn-out proof.

See your authorized American Sterilizer dealer or write for Bulletin DC-410.

AMERICAN STERILIZER
Erie • Pennsylvania

IN CANADA: The American Sterilizer Company of Canada Limited, Brampton, Ontario

Modern
TECHNICAL EQUIPMENT

for the Osteopathic Hospital and Private Office is illustrated and described in Amsco's NEW Brochure MC-524. Use the convenient coupon to send for your *free copy* . . . TODAY!

AMERICAN STERILIZER CO.
ERIE, PENNSYLVANIA

Without obligation, please send your illustrated brochure MC-524 of Amsco's Technical Equipment for Osteopathic Hospitals and Private Offices.

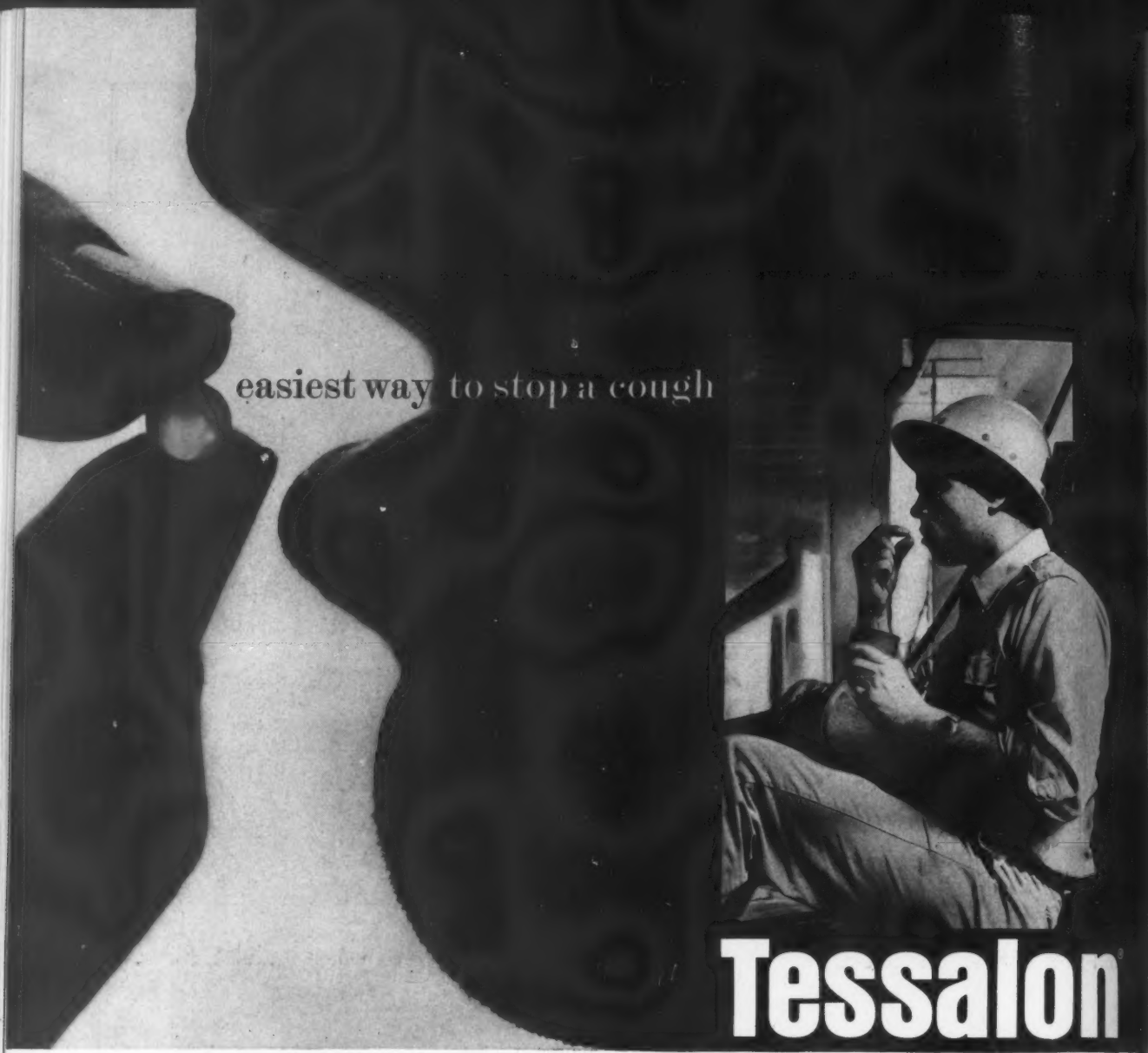
NAME.....TITLE.....

ORGANIZATION.....

ADDRESS.....

CITY.....STATE.....

JAOA



perles

Tessalon perles stop cough fast — and they're convenient to take. No mess, no spillage, no awkward spoons or bottles to carry around. Another advantage: *no taste*. An exact, effective dose is sealed in a tiny gelatin sphere.

Reasons *why* Tessalon stops cough so effectively: it acts where cough begins—in the chest; it acts at the cough reflex center—in the medulla; it acts promptly—within 15 to 20 minutes, the effect lasting up to 8 hours. Tessalon is *not* a narcotic, yet has been reported 2½ times more effective than codeine in suppressing cough.[1]

SUPPLIED: Tessalon *Perles*, 100 mg. (yellow); bottles of 100. Tessalon *Pediatric Perles* (for children under 10), 50 mg. (red); bottles of 100. *Also available* (for use when oral administration of Tessalon is precluded): *Ampuls*, 1 ml. (5 mg.); cartons of 5.

1. Shane, S. J., Krzyski, T. K., and Copp, S. E.: Canad. M. A. J. 77:600 (Sept. 15) 1957.

TESSALON® (benzonatate CIBA)

CIBA

Summit, New Jersey

Remember
SERPASIL®
(reserpine CIBA)
for the anxious hypertensive with or without tachycardia

8/3736MK

NEW: CHYMAR® Buccal

controls inflammation, swelling and pain... Chymar Buccal tablets release chymotrypsin directly into the blood stream through the buccal mucosa for rapid systemic anti-inflammatory action. Beneficial in the management of inflammatory conditions of any origin, Chymar Buccal may be used as the sole anti-inflammatory agent in many cases. In more severe conditions the vigorous anti-inflammatory response obtained with injectable Chymar—Aqueous or in Oil—can be satisfactorily maintained with Chymar Buccal tablets. *Supplied in bottles of 24 tablets containing purified chymotrypsin from mammalian pancreas. Proteolytic activity . . . 10,000 Armour Units per tablet.*

CHYMAR *THE SUPERIOR ANTI-INFLAMMATORY ENZYME*

ARMOUR PHARMACEUTICAL COMPANY • KANKAKEE, ILLINOIS/*Armour Means Protection*

Late evening dose doesn't interfere with sleep.

Since Tenuate is free of CNS stimulation, it can be given in mid-evening, when TV snacks run up a high calorie count. Even doses given as late as 10 p.m. will not intefere with sleep.[3]

Tenuate cuts the urge to eat. So well, in fact, that weight loss on Tenuate averages over 1.5 lbs. a week.[8] (see chart)

Safe—Tenuate can be used even in overweight cardiacs or hypertensives.

EKG studies substantiate Tenuate's lack of appreciable CNS stimulation. No effect on heart rate, blood pressure, pulse or respiration is demonstrable.[8] Thus Tenuate is particularly well suited for hypertensive and cardiac patients — those whose weight *must* come down.

PROOF OF WEIGHT LOSS[3-4]

In a series of 102 patients, the following weight losses were obtained:

Lbs./Week	Number of Patients	% Patients
0.1-0.9	23	22.54
1.0-1.9	55	53.92
2.0-2.9	22	21.56
3.0-4.0	2	1.96
	102 PATIENTS	100%

new

TENUATE

(diethylpropion)

hunger control with no CNS stimulation[1-7]

Indications: The overweight patient, including adolescent, geriatric and gravid, as well as special risk situations – cardiac, hypertensive, diabetic.

Dosage: One 25 mg. tablet one hour before meals. To control nighttime hunger, an additional tablet may be taken in mid-evening without inducing insomnia.

References: **1.** Huels, G.: Mich. Acad. Gen. Prac. Symposium, Detroit, 1959. **2.** Horwitz, S.: *personal communication.* **3.** Spielman, A. D.: Mich. Acad. Gen. Prac. Symposium, Detroit, 1959. **4.** Ravetz, E.: Mich. Acad. Gen. Prac. Symposium, Detroit, 1959. **5.** Decina, L. J.: Exper. Med. & Surg. *in press.* **6.** Scanlan, J. S.: *in press.* **7.** Kroetz and Storck: *personal communication.* **8.** Alfaro, R. D.; Gracanin, V., and Schleuter, E.: *to be published.*

TRADEMARK: 'TENUATE'

Merrell
SINCE 182[illegible]

THE WM. S. MERRELL COMPANY
New York • Cincinnati • St. Thomas, Ontario

thwarts refrigerator raiders

TENUATE– Especially for late evening and "4th meal" eaters. Controls hunger without producing sleeplessness.

A potent, low-dose antihistamine for allergic patients who must remain active and alert†

NEW HISPRIL*

brand of diphenylpyraline hydrochloride

Spansule® 5 mg.

brand of sustained release capsules

and Tablets 2 mg.

ADVANTAGES:

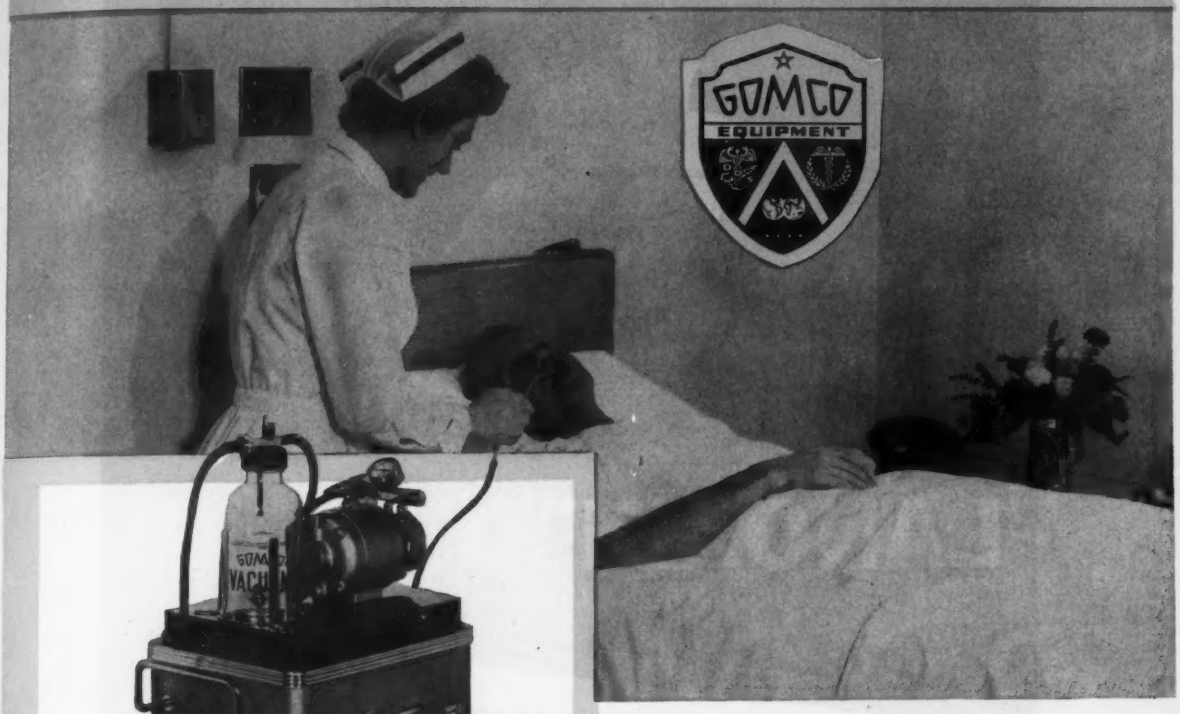
1. Often works where certain other antihistamines have failed.
2. Minimal incidence of side effects.
3. All-day, all-night protection with a single 'Spansule' capsule q12h.

Smith Kline & French Laboratories, Philadelphia

*Trademark

SMITH KLINE & FRENCH

Many Uses for This Compact GOMCO Aspirating Pump



GOMCO No. 789 PORTABLE ASPIRATING PUMP

Like all Gomco equipment, the 789 is quality-built for years of trouble-free service. It is easy to clean, very simple to operate and requires a minimum of maintenance.

The lightweight Gomco No. 789 Aspirating Pump is saving valuable time and energy in thousands of hospitals and clinics from coast to coast. Weighing only 16 pounds, it is easily carried wherever the need arises.

The many important uses of the 789 include general post-operative work, removal of mucous from throats of newborn and for polio cases.

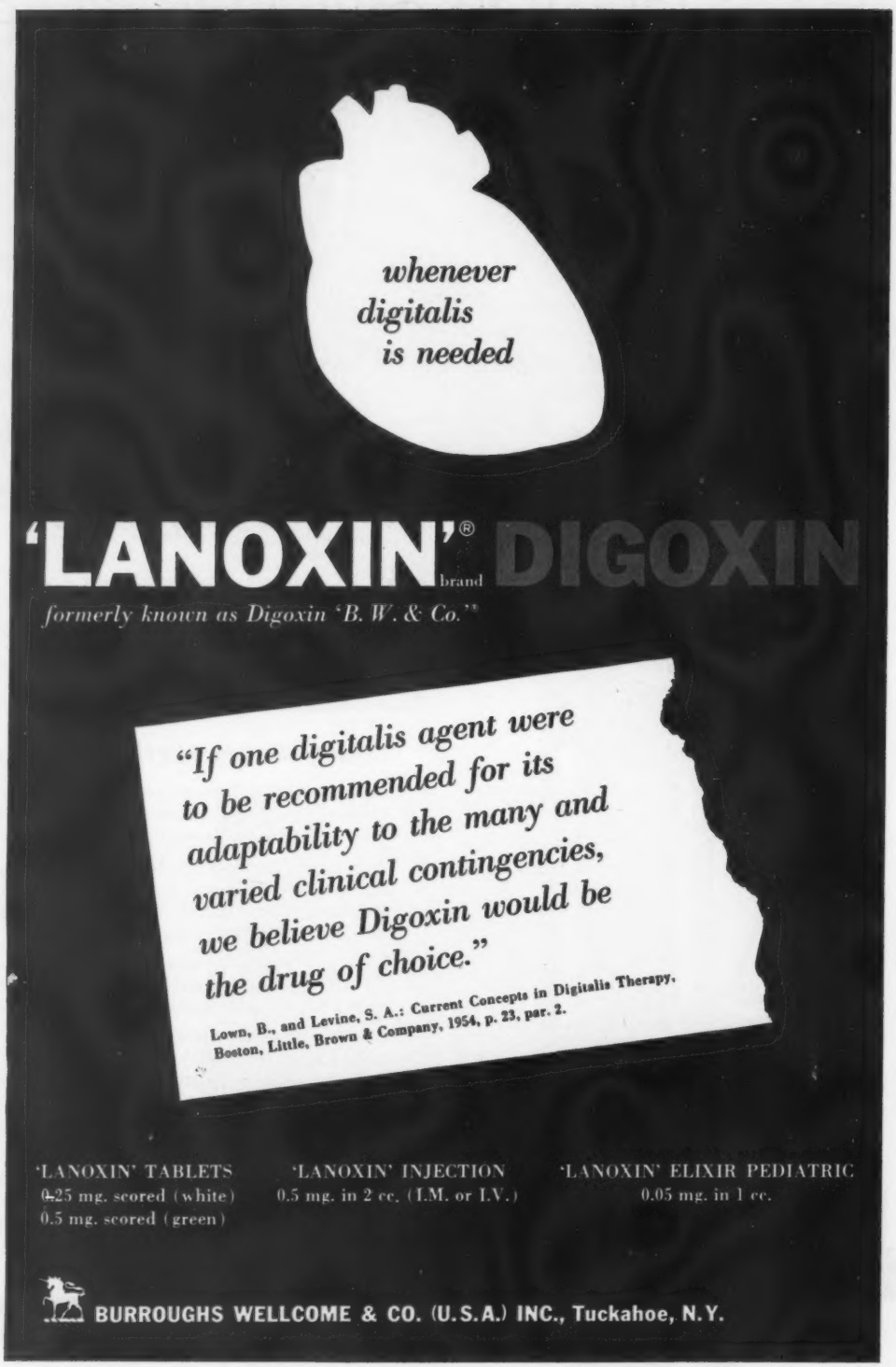
Accurate regulator valve and gauge provide precision control of suction from 0" to 20" of mercury. The exclusive, patented Gomco Safety Overflow Valve prevents pump damage by closing the suction system upon entry of moisture into the valve. Rubber-tired mobile stands are available if desired.

Ask your Gomco dealer to show you the many advantages of the 789 Aspirating Pump. He will be glad to demonstrate this and any of the other Gomco units in which you may be interested.

GOMCO SURGICAL MANUFACTURING CORP.

830-M E. Ferry St., Buffalo 11, N. Y.

Distributed Outside the U. S. A. and Canada by:
INTERNATIONAL GENERAL ELECTRIC COMPANY
150 East 42nd Street, New York 17, N. Y.


whenever
digitalis
is needed
'LANOXIN'® brand DIGOXIN
formerly known as Digoxin 'B. W. & Co.'®
"If one digitalis agent were to be recommended for its adaptability to the many and varied clinical contingencies, we believe Digoxin would be the drug of choice."
Lown, B., and Levine, S. A.: Current Concepts in Digitalis Therapy, Boston, Little, Brown & Company, 1954, p. 23, par. 2.
'LANOXIN' TABLETS
0.25 mg. scored (white)
0.5 mg. scored (green)
'LANOXIN' INJECTION
0.5 mg. in 2 cc. (I.M. or I.V.)
'LANOXIN' ELIXIR PEDIATRIC
0.05 mg. in 1 cc.
BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

"... the digitalis preparation of choice for the treatment of the usual patient with congestive heart failure ..."*

GITALIGIN®†

WIDEST SAFETY MARGIN—AVERAGE THERAPEUTIC DOSE ONLY ⅓ THE TOXIC DOSE. The average therapeutic dose of other digitalis preparations is ⅔ the toxic dose.‡

FASTER RATE OF ELIMINATION THAN DIGITOXIN OR DIGITALIS LEAF. Therefore, should toxicity inadvertently occur, symptoms would be of much shorter duration with GITALIGIN.

THESE SIMPLE DOSAGE EQUIVALENTS MAKE IT EASY TO SWITCH YOUR PATIENT TO GITALIGIN—0.5 mg. of Gitaligin is approximately equivalent to 0.1 Gm. digitalis leaf, 0.5 mg. digoxin or 0.1 mg. digitoxin.

Supplied:

GITALIGIN 0.5 mg. Tablets—bottles of 30 and 100.
GITALIGIN Injection Ampuls—2.5 mg. in 5 cc. sterile, I.V. solution.
GITALIGIN Drops 30 cc. bottle with special calibrated dropper.

*BATTERMAN, R. C., ET AL.: CIRCULATION 5:201, 1952
†WHITE'S BRAND OF AMORPHOUS GITALIN • ‡BIBLIOGRAPHY AVAILABLE ON REQUEST

WHITE LABORATORIES, INC., KENILWORTH, NEW JERSEY

Hypertensive Heart Disease

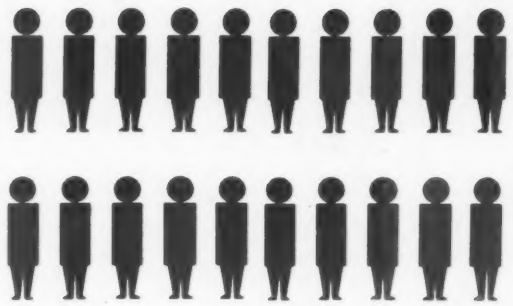
FOR UNMATCHED TOLERANCE AND OPTIMAL ABSORPTION

MOL-IRON with VITAMIN C

(Molybdenized-Ferrous Complex)

IN IRON DEFICIENCY ANEMIA – SPECIALLY WHEN IRON ABSORPTION IS DEFECTIVE

MOL-IRON... WELL TOLERATED by 97.9% of 336 patients[1-9]



But 22.4% G. I. side effects with $FeSO_4$

VITAMIN C—"Optimal absorption of iron is best assured by administering it in the ferrous form with ascorbic acid..."[10]

MOL-IRON WITH **VITAMIN C** TABLETS

Each contains—Mol-Iron (ferrous sulfate 195 mg., and molybdenum oxide 3 mg.) plus ascorbic acid 75 mg. Bottles of 100. Dose—1 or 2 tablets t.i.d.

1. Brit. M. J. 1:407, 1952. 2. Bull. Margaret Hague Mat. Hosp. 1:68, 1948. 3. Am. J. Obst. & Gyn. 57:541, 1949. 4. Connecticut M. J. 14:930, 1950. 5. J. Lancet 66:218, 1946. 6. Am. J. Obst. & Gyn. 62: 947, 1951. 7. Am. J. Med. Sc. 212:76, 1946. 8. Obst. & Gynec. 5: 201, 1955. 9. J. Ped. 41:170, 1952. 10. Ann. Int. Med. 42:458, 1955.

White's

WHITE LABORATORIES, INC.
KENILWORTH, NEW JERSEY

consider the person who provides the care.

She may not know that these home nursing aids are available
... in drug departments everywhere.

CHUX® Disposable Underpads
Large and Extra Large. Facilitate managment of fluids and fecal discharges while keeping bed linen clean and dry.

CHIX® Adult Cloth Diapers
Complete protection for both ambulatory and bedridden incontinents.

CHIX® Cleaners
Soft, disposable, fabric tissue. Used wet or dry as an ointment applicator, wipe, or perineal cleaner.

PROFESSIONAL PRODUCTS DIVISION CHICOPEE MILLS, INC. 47 Worth Street, New York 13, N.Y.
a Johnson & Johnson Company

© CM INC., '59

now

FOR VAGINAL MONILIASIS

HYVA

GENTIAN VIOLET

VAGINAL TABLETS

The Only Specific Antimycotic Vaginal Tablet With A Gel Forming Base

A new vaginal therapy specifically designed to produce unmatched and outstanding results. Methylrosaniline chloride (gentian violet) has generally proved the most effective and specific agent for the treatment of vaginal candidiasis caused by the fungus Candida.

Hyva Gentian Violet Tablets virtually eliminate the principal disadvantages of present gentian violet preparations. They may be handled without staining and have psychological and aesthetic acceptance.

Hyva combines the fungicidal action of gentian violet (1.0 mgm.) with three active surface reducing agents and bactericides.* These active ingredients have been incorporated into a mildly effervescent "gel" forming base which provides for maximum and prolonged effectiveness. Shorter treatment time is required without the usual messiness normally experienced.

One tablet intravaginally for 12 nights. When necessary one tablet twice daily may be recommended. Patient should take a Nylmerate Solution water douche on arising and preceding next tablet application.

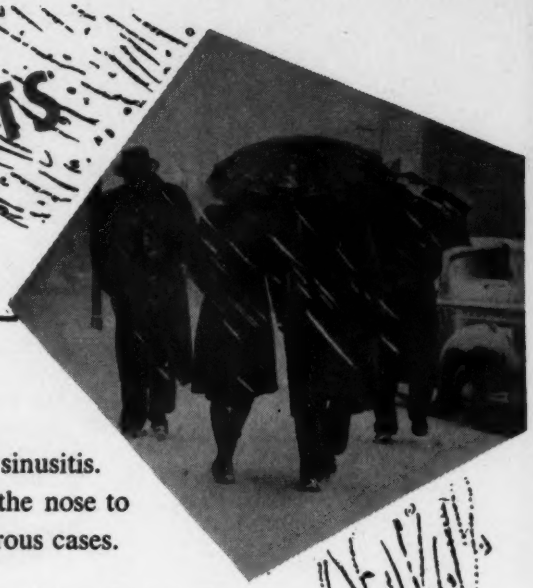
Prescribe Hyva Gentian Violet Tablets—boxes of 12 tablets.

*Alkyldimethylbenzylammonium chloride (0.5 mgm.)
Polyoxyethylenenonylphenol (10.0 mgm.)
Polyethlene Glycol Tert-Dodecylthioether (5.0 mgm.)

WRITE FOR DESCRIPTIVE LITERATURE

HOLLAND-RANTOS COMPANY, INC. • 145 HUDSON STREET, NEW YORK 13, N. Y.

BAD WEATHER FOR SINUS PATIENTS



Colds and influenza aggravate sinusitis. Extension of congestion from the nose to the sinuses accounts for numerous cases.

Iodo-Niacin has been found highly effective for liquefying, loosening and expelling mucopurulent accumulations in the deep nasal passages and accessory sinuses. In this way it promotes drainage and aeration and thus relieves sinus congestion and headaches.

Iodo-Niacin* tablets contain potassium iodide 135 mg. (2¼ gr.) and niacinamide hydroiodide 25 mg. (⅜ gr.), slosol coated pink. Usual dose, 2 tablets three times a day. May be given in full dosage for a year or longer without any iodism or ill effects.[1]

For emergency intramuscular or intravenous administration. Iodo-Niacin ampuls are available.[2]

IODO-NIACIN*

IODIDE THERAPY WITHOUT IODISM

Numerous physicians have written favorable reports on the use of Iodo-Niacin in the symptomatic relief of sinus congestion and headaches.

[1] *Am. J. Digest. Dis. 22:5, 1955.*
[2] *M. Times 84:741, 1956.*

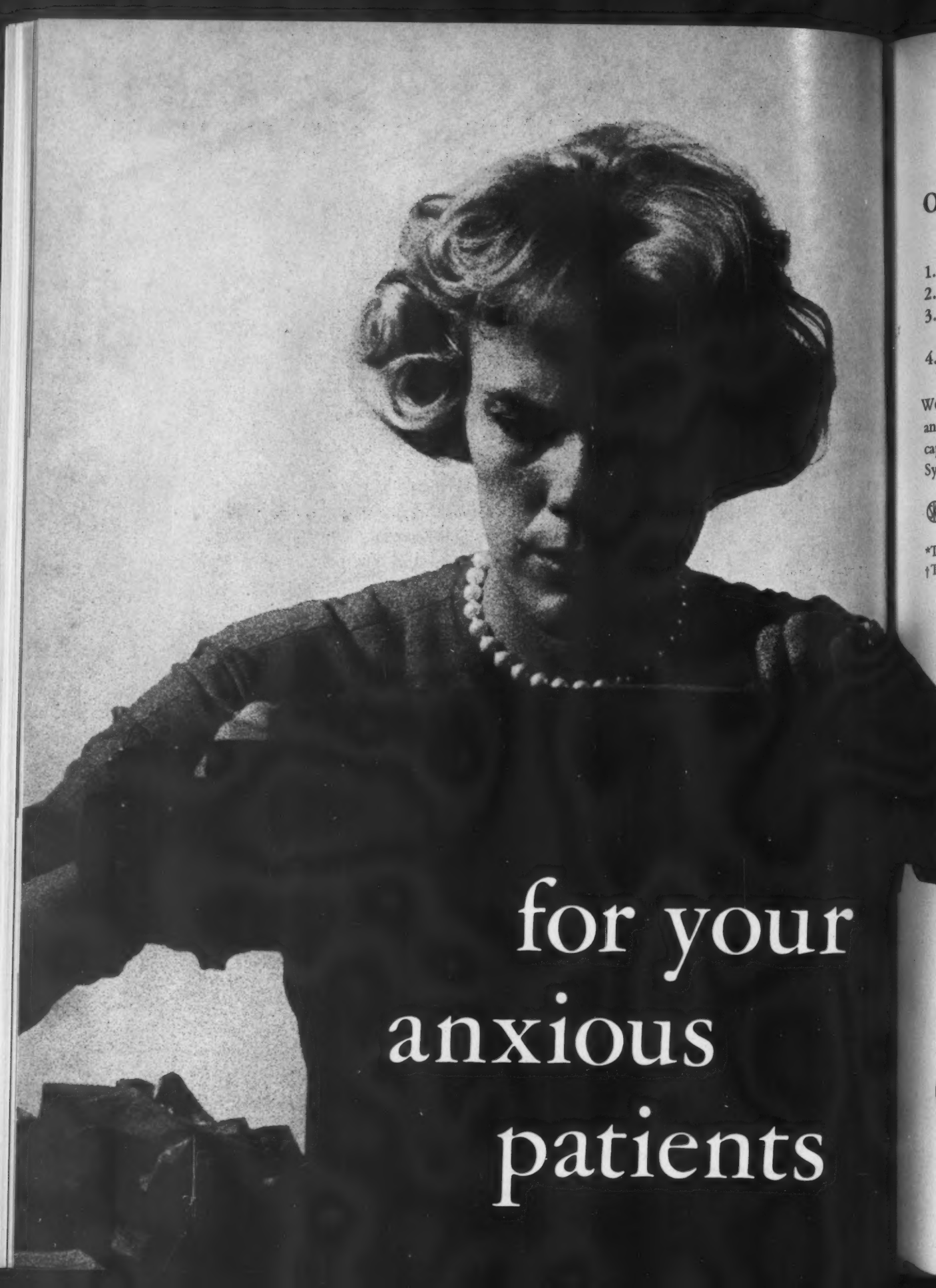
*U.S. Patent Pending

Cole
CHEMICAL COMPANY
3721-27 Laclede Ave.
St. Louis 8, Mo.

Write for professional samples and literature

Cole Chemical Company AOS-10
3721-27 Laclede Ave., St. Louis 8, Mo.
Gentlemen: Please send me professional literature and samples of IODO-NIACIN.

DOCTOR .....
STREET .....
CITY..... ZONE..... STATE.....


for your
anxious
patients

offers four beneficial effects

1. relieves anxiety, tension and related depression
2. exerts a unique alerting effect in many patients
3. dispels preoccupation with emotionally induced symptoms such as headache, g.i. disturbances and non-specific musculoskeletal pain
4. normalizes sleeping and eating habits

WORKING PATIENTS appreciate Compazine's remarkable freedom from drowsiness and the convenient daylong calming effect of a single 'Compazine' Spansule† capsule, taken on arising. Also available: Tablets, Ampuls, Multiple dose vials, Syrup and Suppositories.

SMITH KLINE & FRENCH LABORATORIES

*T.M. Reg. U.S. Pat. Off. for prochlorperazine, S.K.F.
†T.M. Reg. U.S. Pat. Off. for sustained release capsules, S.K.F.

Compazine*

remarkable for its freedom from drowsiness and depressing effect

The nation versus cancer

You are looking at part of the largest research venture in medical history—a crash program against cancer, nature's most baffling puzzle. To take the puzzle apart, piece by piece, tremendous resources have been banded together throughout the nation by the government's Cancer Chemotherapy National Service Center.

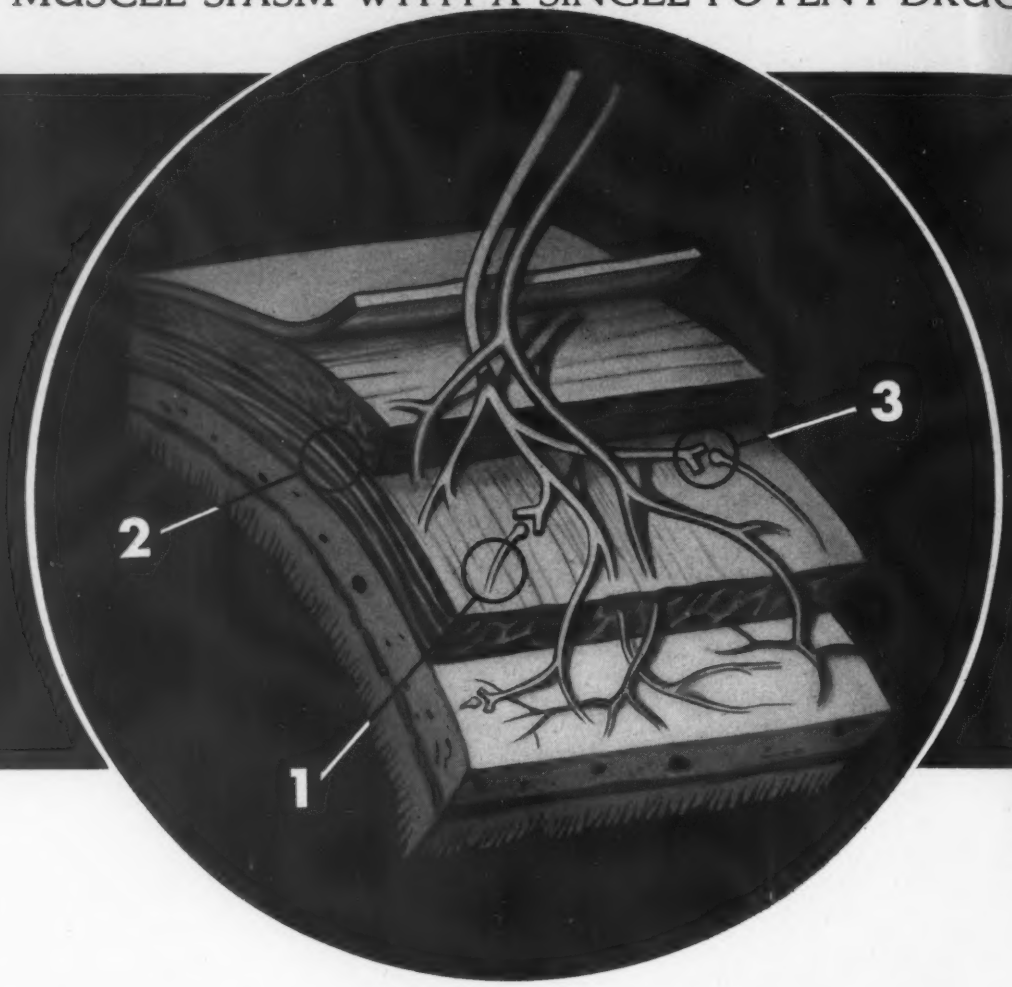
The pharmaceutical industry is an active partner. Here at Wyeth, for example, many scientists are busy creating thousands of synthetic compounds and fermentation products for anticancer screening. Still other Wyeth scientists, like George H. Warren, Ph.D., shown here, are screening the materials in mice against three forms of malignancy—sarcoma 180, the Ehrlich ascites tumor, and the ascitic form of leukemia L1210. Dr. Warren views this three-tumor screen as a possible detector of compounds active against cancer.

In searching for anticancer properties, Dr. Warren and his group will make 12,000 tests in the coming year. Many of these will use chemical substances produced at the Wyeth Institute for Medical Research. Many other tests will use fermentation products from the higher fungi, such as are shown here in the flasks. All materials passing the screen, as shown by growth inhibition or mouse-survival time, will be candidates for secondary study and eventual pharmacological evaluation for use in man.

This is the ultimate objective—to find effective agents against human cancer. No predictions can be made. There are no yardsticks. There is no certainty. Yet few research programs have greater significance. Dr. Warren and all the associated Wyeth scientists add their resources to the nation's eloquent effort.

Wyeth®
Philadelphia 1, Pa.

UNIQUE THREE-WAY CONTROL OF SMOOTH MUSCLE SPASM WITH A SINGLE POTENT DRUG



① ANTICHOLINERGIC inhibition of parasympathetic stimuli

② MUSCULOTROPIC spasmolytic action directly on smooth muscle

③ GANGLION-BLOCKING action at synaptic level

"MUREL"®

Brand of Valethamate bromide

IN SMOOTH MUSCLE SPASM

"potent in relaxing the spasm of smooth muscle whether in the G. I., or G. U. tracts, or the gallbladder."[1]

in peptic ulcer — breaks the chain reaction of spasm-pain[2,3]

in G.I. spasm — severe convulsive pain and vomiting reported eliminated or substantially improved without unpleasant side effects or toxic reactions[2]

in biliary spasm and chronic cholecystopathies with or without stones — excellent response promptly achieved[3]

in G.U. spasm — in postoperative spasm, cystitis, and pyelitis, effective relief of pain and spasm was noted in all of a series of 75 patients[4]

Effective and well tolerated...**"MUREL" provides decisive relief without drug-induced complications; its coordinated three-way action permits significantly low dosage and minimizes reaction potential of any one mechanism; rapidly detoxified and excreted, avoiding cumulative effects. With average therapeutic dosages, there were no side effects such as mouth dryness, visual disturbances, interference with micturition, or bowel evacuation.[2]**

Dosage: Mild to moderate cases: initially, 1 or 2 tablets four times daily. Acute or severe cases: 1 to 2 cc. (10-20 mg.) intravenously or intramuscularly every four to six hours up to maximum of 60 mg. in 24 hour period. The higher dosage range is usually required in spasm of the G.U. and biliary tract.

Supplied: "MUREL" Tablets — 10 mg. Valethamate bromide, bottles of 100 and 1,000. "MUREL" Injectable — 10 mg. per cc., vials of 5 cc. (Also available: "MUREL" with Phenobarbital Tablets — 10 mg. Valethamate bromide with ¼ gr. phenobarbital per tablet, bottles of 100 and 1,000.)

1. Holbrook, A. A.: Report abstracted in M. Science 4:46 (July 10) 1958. 2. Peiser, U.: Med. Klin. 50:1479 (Sept. 2) 1955. 3. Winter, H.: Medizinische, p. 1206 (Aug. 27) 1955. 4. Berndt, R.: Arzneimittel-Forsch. 5:711 (Dec.) 1955.

Ayerst *Ayerst Laboratories* New York 16, N. Y. • Montreal, Canada

5920

no more battles at vitamin time

Delectavites®

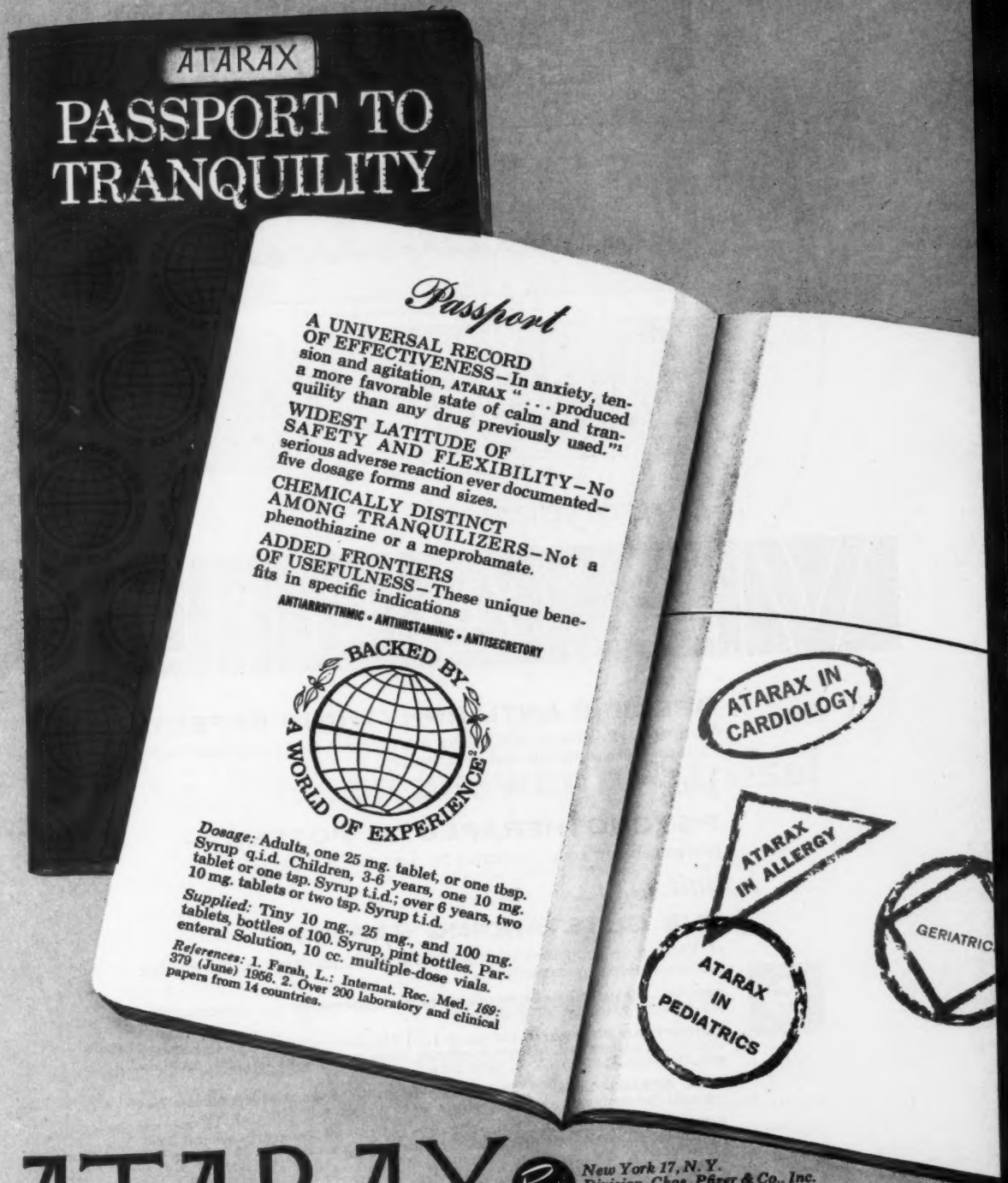
delectable, chewable, chocolate-like vitamin-mineral nuggets

No fights, no battles at vitamin time because children love to chew DELECTAVITES. These delectable, easily chewable chocolate nuggets supply all essential vitamins as well as minerals so necessary during the years of growth. As soon as children can chew, they can go directly from vitamin drops to DELECTAVITES. *Now* your little patients will follow your instructions about taking vitamins daily.

Each nugget contains: Vitamin A—5,000 Units* / Vitamin D—1,000 Units* / Vitamin C—75 mg. / Vitamin E—2 Units† / Vitamin B_1—2.5 mg. / Vitamin B_2—2.5 mg. / Vitamin B_6—1 mg. / Vitamin B_{12} Activity—3 mcg. / Panthenol—5 mg. / Nicotinamide—20 mg. / Folic Acid—0.1 mg. Biotin—30 mcg. Rutin—12 mg. / Calcium Carbonate—125 mg. / Boron—0.1 mg. / Cobalt—0.1 mg. / Fluorine—0.1 mg. / Iodine—0.2 mg. / Magnesium—3.0 mg. / Manganese—1.0 mg. / Molybdenum—1.0 mg. / Potassium—2.5 mg. *U.S.P. UNITS †INT. UNITS

dosage: one Delectavites daily. **supply:** Box of 30 (one month's supply), Box of 90 (three months' supply).

WHITE LABORATORIES, INC., KENILWORTH, NEW JERSEY


ATARAX
PASSPORT TO TRANQUILITY
Passport
A UNIVERSAL RECORD OF EFFECTIVENESS—In anxiety, tension and agitation, ATARAX "... produced a more favorable state of calm and tranquility than any drug previously used."1
WIDEST LATITUDE OF SAFETY AND FLEXIBILITY—No serious adverse reaction ever documented—five dosage forms and sizes.
CHEMICALLY DISTINCT AMONG TRANQUILIZERS—Not a phenothiazine or a meprobamate.
ADDED FRONTIERS OF USEFULNESS—These unique benefits in specific indications
ANTIARRHYTHMIC • ANTIHISTAMINIC • ANTISECRETORY
BACKED BY A WORLD OF EXPERIENCE
Dosage: Adults, one 25 mg. tablet, or one tbsp. Syrup q.i.d. Children, 3-6 years, one 10 mg. tablet or one tsp. Syrup t.i.d.; over 6 years, two 10 mg. tablets or two tsp. Syrup t.i.d.
Supplied: Tiny 10 mg., 25 mg., and 100 mg. tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.
References: 1. Farah, L.: Internat. Rec. Med. 169: 379 (June) 1956. 2. Over 200 laboratory and clinical papers from 14 countries.
ATARAX IN CARDIOLOGY
ATARAX IN ALLERGY
GERIATRIC
ATARAX IN PEDIATRICS

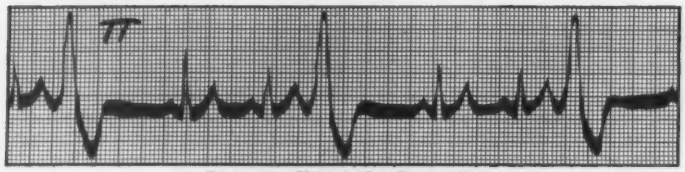
ATARAX®

℞ only

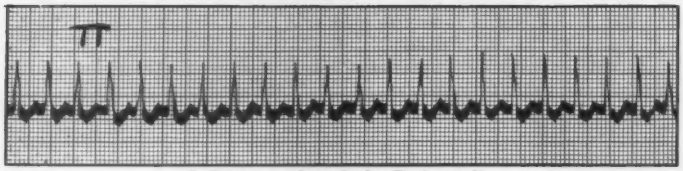
(brand of hydroxyzine)

New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being

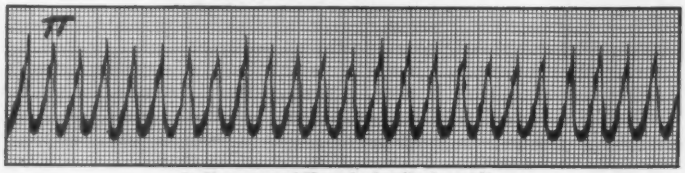
restore normal sinus rhythm



1. Premature Ventricular Contractions



2. Paroxysmal Auricular Tachycardia



3. Paroxysmal Ventricular Tachycardia

in arrhythmias

VISTARIL*

HYDROXYZINE PAMOATE

More than a tranquilizer

SPECIFIC ANTIARRHYTHMIC EFFECT–

Vistaril is effective in ventricular extrasystoles and paroxysmal tachycardias (both auricular and ventricular).

plus

PSYCHOTHERAPEUTIC POTENCY–

proven calming action indicated for arrhythmia patients

and

THE OUTSTANDING SAFETY

of Vistaril as compared to other antiarrhythmic drugs in general use has been noted by investigators.

THE FOLLOWING DOSAGE REGIMEN IS RECOMMENDED (individualized by the physician for maximum effectiveness):

PARENTERAL DOSAGE: 50-100 mg. (2-4 cc.) I.M. stat, and q. 4-6 h. p.r.n.; maintain with 25 mg. b.i.d. or t.i.d. In acute emergency, 50-75 mg. (2-3 cc.) I.V. stat; maintain with 25-50 mg. (1-2 cc.) I.V. q. 4-6 h. p.r.n.

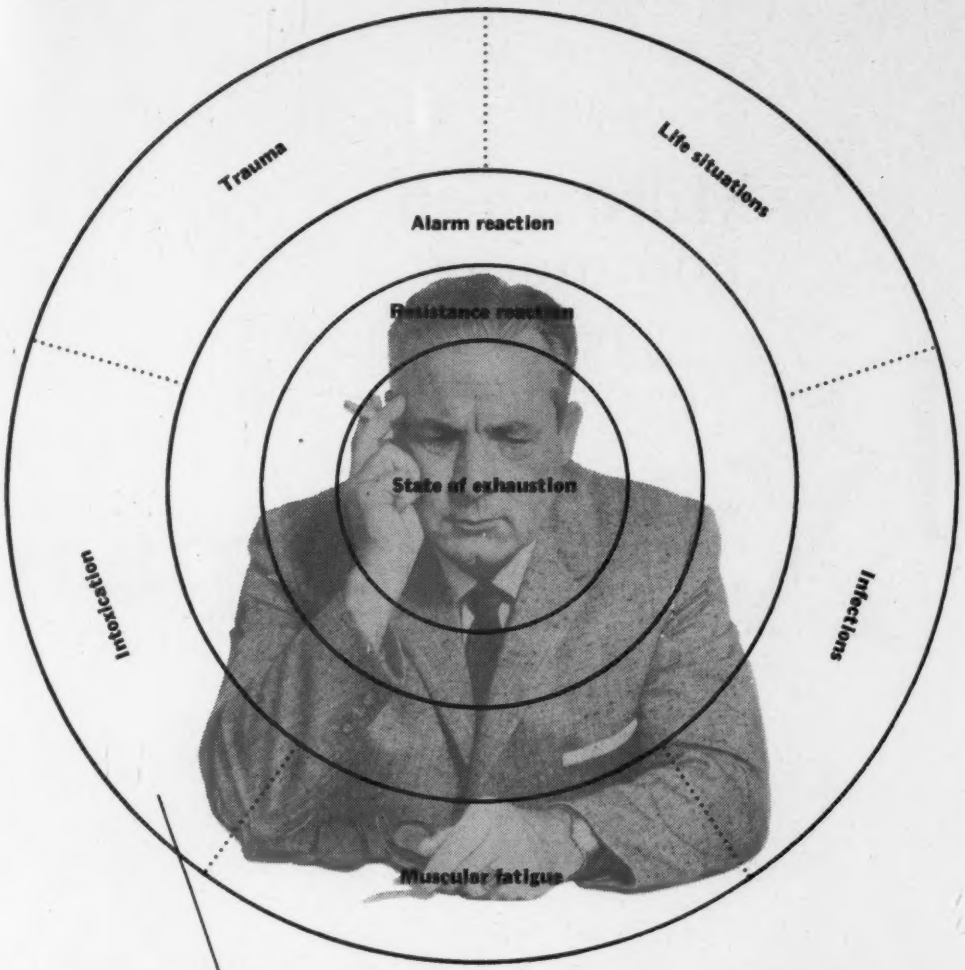
ORAL DOSAGE: Initially, 100 mg. daily in divided doses until arrhythmia disappears. For maintenance or prophylaxis, 50-75 mg. daily in divided doses.

SUPPLY: Vistaril Capsules, 25 mg., 50 mg.; and 100 mg. Vistaril Parenteral Solution, 10 cc. vials and 2 cc. Steraject® Cartridges. Each cc. contains 25 mg. (as the hydrochloride.)

Pfizer *Science for the world's well-being*
PFIZER LABORATORIES
Division, Chas. Pfizer & Co., Inc.
Brooklyn 6, N. Y.

*Trademark

REFERENCES: 1. Burrell, Z. L., et al.: Am. J. Cardiol., 1:624 (May) 1958. 2. Hutcheon, D. E., et al.: J. Pharmacol. & Exper. Therap., 118: 451 (Dec.) 1956.



VM No. 39... an answer to Stress!

ONE OUT OF EVERY FIVE PATIENTS under your care, Doctor, suffers from stress. Stress is either the causative or the accompanying factor in fifty of the most common complaints you see every day. The continual stress factor which your patients face — unless properly combatted — can defeat even the most effective treatment.

● Now, from the laboratories of Vitaminerals comes the first truly effective specific formula designed to meet the special nutritional needs of the patient suffering from stress . . . a formula designed to combat the organic destruction caused by your patients' resistance reaction to unremitting strain. You have no patient to whom specialized nutritional care is so important as this one. The answer—the new VM. No. 39. Specific for stress—specific for your practice.

GLENDALE 1
VITAMINERALS INC.
CALIFORNIA

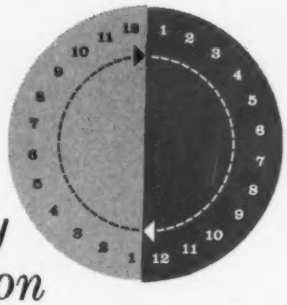
Bottles of 100 tablets* $4.50

* *This new VM formula is especially compounded as a soft chewable tablet with a delicious fruity flavor. They literally "melt in your mouth."*

Miltown® in continuous release capsules

Rx Meprospan

the 24-hour tranquilizer



safe, continuous relief of anxiety and tension ... all day ... all night

Supplied: 200 mg. continuous release capsules of Miltown (meprobamate, Wallace) in bottles of 30.

Literature and samples on request

WALLACE LABORATORIES • *New Brunswick, N.J.*

CME-9618

SUDDENLY

"...after 30 years my headaches returned..."

When migraine that has beset a patient in her twenties suddenly returns in her fifties, a "little stroke" should be suspected.[1] In such migraine attacks, when ushered in by one or more "little strokes," pain may be minimal and the dominant feature may be spells of nausea, dizziness, depression, retching, fatigue, abdominal pain or transient blindness.[1] ■ Early detection of "little strokes" resulting from capillary fragility can gain vital therapeutic time to support capillary resistance and repair.[2]

1. Alvarez, W. C.: Geriatrics 13:647, 1958.
2. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953.

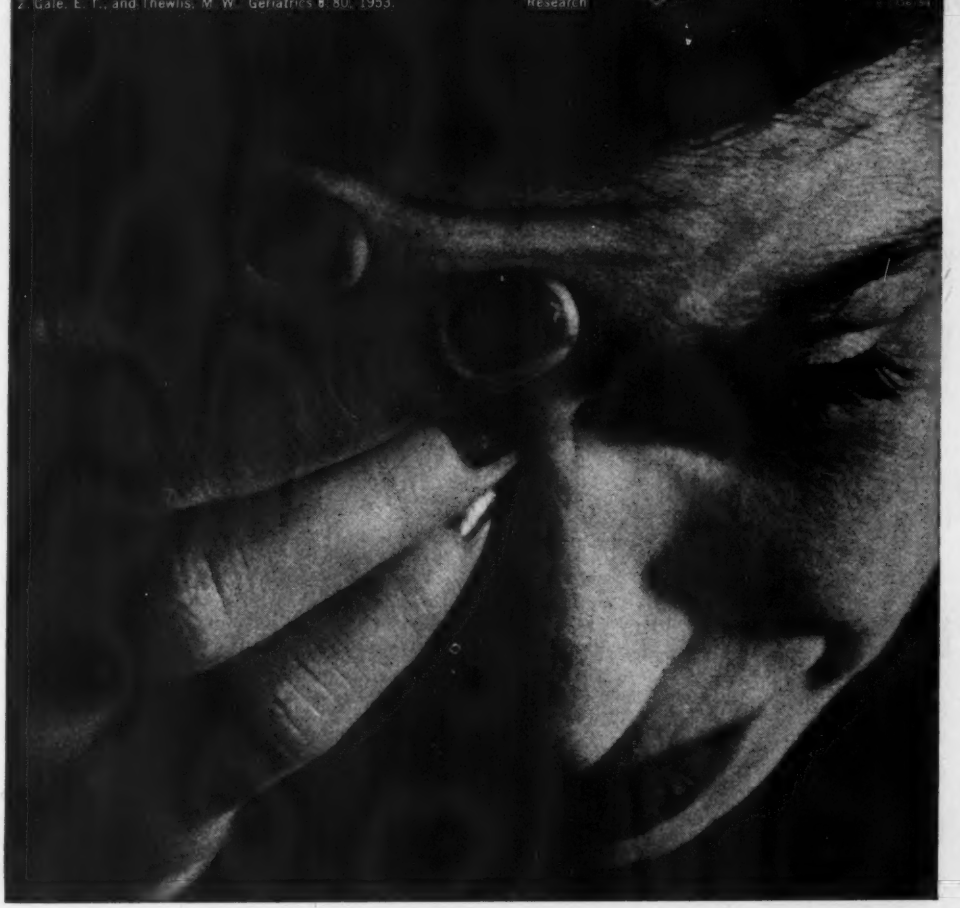
THE CAPILLARY PROTECTIVE FACTORS

Hesper-C

hesperidin complex and ascorbic acid

Products of Original Research

THE NATIONAL DRUG COMPANY
Philadelphia 44, Pa.



IT HAPPENS IN THE BEST NOURISHED OF FAMILIES

VITERRA®

meets the specific vitamin-mineral needs of every member of the household — select the form that suits the age and condition of each patient best

VITERRA CAPSULES—comprehensive daily supplement. Bottles of 100.

VITERRA TASTITABS®—can be chewed, dissolved, or swallowed. Bottles of 100.

VITERRA THERAPEUTIC—high potency formula. Bottles of 30 and 100.

VITERRA PEDIATRIC—for infants and small children. 50 cc. Metered-Flow bottle.

Selectively formulated by one of the major producers of bulk vitamins

ROERIG

New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being

right from the start!*

the "right choice" antibiotic for use in

- skin, soft tissue and post-surgical infections
- genito-urinary infections
- respiratory tract infections

due to staph or "gram-negatives"

*KANTREX®

KANAMYCIN SULFATE INJECTION

INJECTION

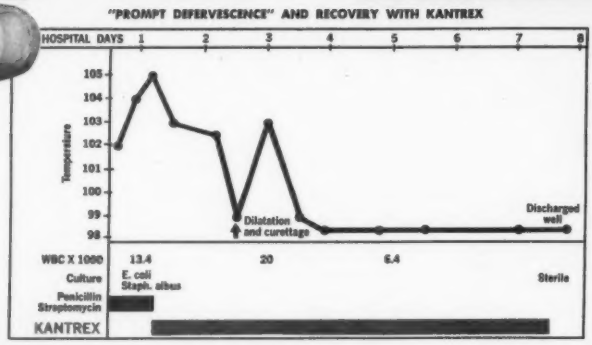
- rapidly *bactericidal* – not merely bacteriostatic
- minimizes emergence of bacterial resistance
- clinically safe in specified dosage
- effective against many organisms resistant to other antibiotics

Bristol

For prompt therapeutic results, KANTREX is the "right choice" antibiotic to use in infections due to staph or "gram-negatives"

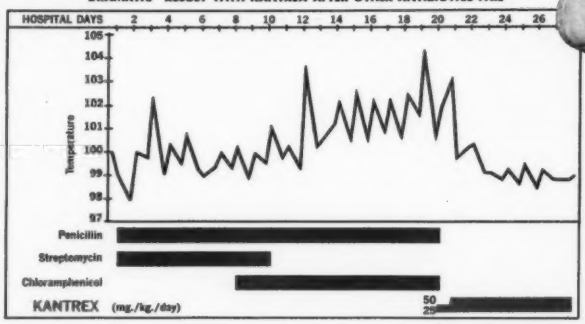
POSTABORTAL SEPSIS

"PROMPT DEFERVESCENCE" AND RECOVERY WITH KANTREX



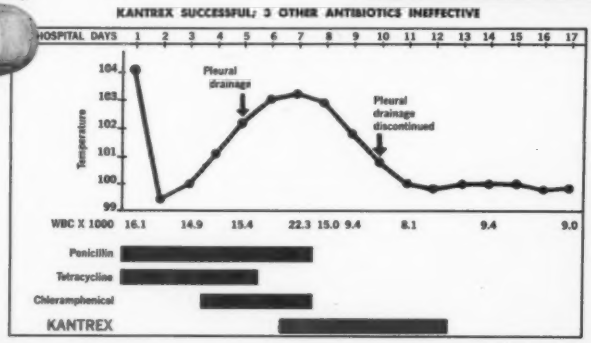
APPENDICEAL ABSCESS

"DRAMATIC" RESULT WITH KANTREX AFTER OTHER ANTIBIOTICS FAIL



STAPH PNEUMONIA

KANTREX SUCCESSFUL; 3 OTHER ANTIBIOTICS INEFFECTIVE



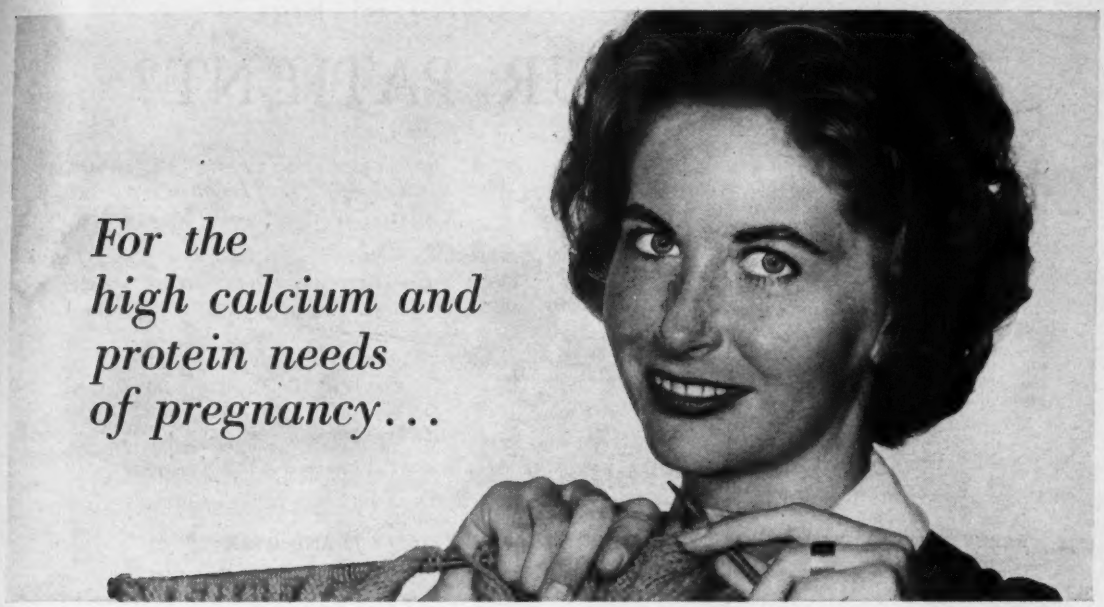
KANTREX® INJECTION

KANAMYCIN SULFATE INJECTION

Bristol

BRISTOL LABORATORIES INC., Syracuse, New York

KANTREX sensitivity discs and comprehensive literature available on request.



New *self-enriched* Carnation Instant

25% more protein, calcium, B-vitamins, richer flavor than ordinary nonfat milk

New Carnation Instant can give your patients a *more delicious* nonfat milk – *extra-rich* in natural milk calcium, protein and B-vitamins.

This new fresh flavor crystal-form nonfat milk can be *self-enriched.* The patient simply adds one extra spoonful of crystals per 8-oz. glass when mixing – to gain 25% more calcium, protein and B-vitamins than ordinary nonfat milk – and far richer flavor. Convenience and low cost also encourage acceptance. Calorie count remains low (400 per quart), facilitating weight control.

In examining the chart, physicians will recognize the particular protective value of the 25% increase in natural milk calcium, more effectively utilized than most medicinal calcium salts.

	Calcium	Protein	Riboflavin	Thiamine
National Research Council Recommended Daily Dietary Allowances During Second Half of Pregnancy	1.5 Grams	68.0 Grams	2.0 Mg.	1.3 Mg.
Amount and Percent of Daily Dietary Allowances Provided by 1 Quart of 25% self-enriched Carnation Instant	1.48 Grams (98%)	41.3 Grams (60%)	2.26 Mg. (113%)	.40 Mg. (30%)

25% self-enriched Carnation Instant
Simply add 1 tablespoon extra Carnation Instant per glass, or 1/3 cup extra Carnation Instant per quart, over regular package directions.

IS THIS YOUR PATIENT?

1.

EARLY POSTMENOPAUSE

Complains of low back pain, vague aches and fatigue

Posture is poor

No x-ray evidence of bone lesions

2.

LATER POSTMENOPAUSE

Back pain is severe, spreading to hips ("girdle pain")

Patient is round shouldered, walks with a stoop

X-ray reveals compression fractures of lower vertebrae

3.

70 AND OVER

Fracture of hip after a minor fall

X-ray reveals fracture of neck of femur

X-ray reveals compression fractures of lower lumbar vertebrae

These three patients have osteoporosis. Early diagnosis and treatment with "Formatrix" is important because osteoporosis is probably the only age change that can be averted. With "Formatrix" therapy, relief from the symptoms of *low back pain, vague aches* and *fatigue* may be obtained in as little as a few weeks. "Formatrix" supplies the essential materials to stimulate increased bone formation and prevent further loss of bone substance that leads eventually to loss of height, stooped posture, and disabling fractures.

The highest incidence of osteoporosis may be found among the 14,000,000 women in the U.S.A. who are 55 years of age and over. Some investigators claim that almost all women past the menopause will show some degree of osteoporosis; furthermore, if all these women were examined carefully, 50 per cent would show x-ray evidence of decreased bone mass.

Suspicion may be the handiest diagnostic tool since presenting symptoms vary from mild to severe and incapacitating pain, and no x-ray evidence of spinal degeneration is available until about 30 per cent of the bone matrix is lost. Between these two extremes there are other signs of estrogen deficiency such as *wrinkled and thinning skin,* a *tendency to appear older than stated years;* there may also be *hypercalciuria* when postmenopausal osteoporosis is complicated by acute osteoporosis of disuse.

Osteoporosis is primarily an atrophic condition of bone matrix formation and any factor that depresses osteoblastic activity or retards the formation of protein and connective tissue such as *prolonged immobilization, cortisone therapy,* or *malnutrition* will favor development of osteoporosis in both male and female.

5678

Ayerst

AYERST LABORATORIES
New York 16, N. Y. • Montreal, Canada

NEW

"FORMATRIX" contains three most essential bone building materials necessary *for matrix* formation, estrogen, androgen and vitamin C.

The estrogen component of "Formatrix" stimulates osteoblastic activity, thus aiding calcium and phosphorus deposition; it also imparts a feeling of "well-being." The anabolic action of methyltestosterone promotes the synthesis of protein and restores a positive nitrogen balance. Together, these hormones have a greater effect on bone and protein metabolism than either alone, and side effects are minimized because of the opposing action of the two steroids on sex-linked tissues. Vitamin C plays an important role in formation of intercellular cement substance and amino acid synthesis. "Formatrix" has a large amount of vitamin C to aid in new bone matrix formation and to further help in the healing of fractures.

"FORMATRIX" – each tablet contains:

Conjugated estrogens equine ("Premarin"®)	1.25 mg.
Methyltestosterone	10.0 mg.
Ascorbic acid	400.0 mg.

Dosage: 1 tablet a day – In the female, three weeks of treatment with a rest period of one week between courses is recommended.

Supplied: Tablets, bottles of 60 and 500.

LITERATURE AVAILABLE ON REQUEST

1.

EARLY POSTMENOPAUSE
No x-ray evidence of bone lesion

2.

LATER POSTMENOPAUSE
X-ray reveals compression fracture of lower vertebrae

3.

70 AND OVER
X-ray reveals fracture of neck of femur

TO RELIEVE LOW BACK PAIN – TO PROMOTE HEALING OF FRACTURES

in osteoporosis

'FORMĀTRIX'

(Brand of Steroid – Vitamin Combination)

for matrix formation

Your difficult rheumatic patient...

on the job again

through effective relief and rehabilitation

Robins

For the patient who does not require steroids

PABALATE®

Reciprocally acting nonsteroid antirheumatics . . . more effective than salicylate alone.

In each enteric-coated tablet:

Sodium salicylate U.S.P.....0.3 Gm. (5 gr.)
Sodium para-aminobenzoate .....0.3 Gm. (5 gr.)
Ascorbic acid .....50.0 mg.

or for the patient who should avoid sodium

PABALATE®-Sodium Free

Pabalate, with sodium salts replaced by potassium salts.

In each enteric-coated tablet:

Potassium salicylate .....0.3 Gm. (5 gr.)
Potassium para-aminobenzoate .....0.3 Gm. (5 gr.)
Ascorbic acid .....50.0 mg.

For the patient who requires steroids

PABALATE®-HC

(PABALATE WITH HYDROCORTISONE)

Comprehensive synergistic combination of steroid and nonsteroid antirheumatics... full hormone effects on low hormone dosage . . . satisfactory remission of rheumatic symptoms in 85% of patients tested.

In each enteric-coated tablet:

Hydrocortisone (alcohol) ..... 2.5 mg.
Potassium salicylate ..... 0.3 Gm.
Potassium para-aminobenzoate.. 0.3 Gm.
Ascorbic acid .....50.0 mg.

PABALATE® Robins PABALATE®-HC

For steroid or non-steroid therapy: SAFE DEPENDABLE ECONOMICAL

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA • Ethical Pharmaceuticals of Merit since 1878

NEW

the promise of

PERMITIL®

fluphenazine dihydrochloride

in everyday office practice

safely control the "target symptoms" of emotional stress with the smallest effective dosage (0.25 mg. b.i.d.) of any neuroleptic* agent

the premise

Emotional tension states, psychosomatic disorders and similar neuroses constitute a major portion of the clinical conditions seen today in everyday office practice. Whether the emotional stress is in the form of a behavioral disturbance characterized by anxiety, anxiety accompanying specific organic disorders or chronic conditions in which anxiety is a contributing factor, the aim in therapy is the same: to alleviate emotional stress and enable the patient to cope with life's problems more effectively and to live more comfortably.

The choice of an agent to overcome the patient's particular "target symptoms" of emotional stress, without impairing alertness or productivity, or producing undesirable reactions, is often a difficult and haphazard task. Yet, one may be guided by the fact that there is a correlation between the dosage of a phenothiazine derivative and the frequency and the type of side effects it causes, ***the less of the drug needed to achieve therapeutic results, the less likely are side effects.*** **Thus, the lower the effective dosage of a phenothiazine derivative, the lower the incidence of unwanted side reactions and, conversely, the higher the level of therapeutic response.**

Now, with PERMITIL, the physician may prescribe a neuroleptic anti-anxiety agent of extraordinary potency and effectiveness, at unprecedented low dosage, with minimal side effects—features that markedly distinguish this compound from other anti-anxiety agents.

the promise

Extensive clinical studies have established important psychopharmacologic advantages for PERMITIL. The effective dosage of PERMITIL (*0.25 mg.* b.i.d.) is the lowest safe dosage of any anti-anxiety agent. Side effects associated with dosage not exceeding 1 mg. per day have been uncommon and transitory.

Unlike other phenothiazines, PERMITIL alleviates symptoms of anxiety, tension, agitation and emotional unrest *without* depressant effect, impaired alertness or slowed intellectual function.

Furthermore, anxiety-induced symptoms of apathy, indifference, listlessness, reduced initiative and chronic emotional fatigue (often refractory to other phenothiazines) frequently respond to administration of PERMITIL. Thus, *a significantly wider spectrum of "target symptoms"* amenable to therapy is an outstanding property of PERMITIL.

Onset of action with PERMITIL is rapid and patients soon become more relaxed and less tense. The patient regains a more confident outlook and normal drive is restored.

PERMITIL has an inherently long duration of effect. This makes possible a particularly convenient and easy-to-remember schedule of morning and evening dosage.

The promise of PERMITIL in everyday office practice, then, is the more effective control of the "target symptoms" of emotional stress with the lowest safe dosage of any anti-anxiety agent.

*neuroleptic—

"The term 'neuroleptic' implies a specific effect of a pharmacologic agent on the nervous system. It refers to a mode of action on affective tension that distinguishes this response from that to hypnotic drugs. The terms 'ataraxics' and 'tranquilizers' are descriptively impressive, but fail to convey what seems psychopharmacologically unique."[1]

PERMITIL®

to fit the promise to your office practice

"The pharmacologic management of psychiatric disorders challenges the therapeutic acumen of the physician. He must choose a drug which will produce remission as quickly as possible with the least risk."[2] In this regard, PERMITIL represents an advance over its predecessors[2] because of its higher level of therapeutic response and low order of side reactions.

The adjunctive use of PERMITIL by the family physician enables him to provide effective pharmacotherapy for many of the emotional symptoms which constitute a major portion of patient disability in everyday office practice.

The Areas of Usefulness for PERMITIL:

- Behavioral disturbances characterized by anxiety, tension, apprehension and instability, as well as depressive symptoms associated with anxiety states
- Emotional stress accompanying organic disorders and complicating recovery from, or acceptance of, the underlying condition
- Chronic disorders in which anxiety and stress are contributing factors, e.g., gastrointestinal dysfunctions, neurodermatitis, asthma, premenstrual tension, arthritis, hypertension and tension headache

How to Prescribe PERMITIL:

PERMITIL has an inherently long duration of effect so that it need be given only twice a day making possible an easy-to-remember morning and evening dosage program. The lowest dose of PERMITIL that will produce the desired clinical effect should be used.

The recommended dose for most adults is one 0.25 mg. tablet twice a day

This may be increased to two 0.25 mg. tablets twice a day if required. Total daily dosage in excess of 1 mg. should be employed only in patients with relatively severe symptoms who have had a trial of lower dosages first that were well tolerated but were only partially effective. In such patients, the total daily dose may be increased to a maximum of 2 mg., given in divided amounts. (Dosage for children has not been established.)

Side Effects—Infrequent; Contraindications—Minimal:

At the recommended dosage of PERMITIL, side effects have been observed infrequently or not at all. PERMITIL, as with other phenothiazines, is contraindicated in severely depressed states.

Available in Tablets of 0.25 mg.; bottles of 50 and 500.

References: 1. Freyhan, F. A.: Psychopharmacology Frontiers, Boston, Little, Brown and Co., 1959, p. 7. 2. Ayd, F. J.: The current status of major tranquilizers, in press.

Whites WHITE LABORATORIES, INC., *Kenilworth, New Jersey*

now potent tranquilizer therapy is safer than ever

Virtual freedom of Mellaril from major toxic effects is due to greater specificity of tranquilizing action – divorced from such "diffuse" effects as anti-emetic action.

MELLARIL is virtually free of such toxic effects as

- jaundice
- Parkinsonism
- blood dyscrasia

"Thioridazine [MELLARIL] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines. . . . This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."

SANDOZ

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

remarkable lack of side effects

In more than 3,000 carefully-followed patients, Mellaril has been almost completely free of such major side effects as jaundice, extrapyramidal symptoms, Parkinsonism, blood dyscrasia, dermatitis– **even when given in quantities far in excess of the usual dosage.**

"POVERTY" OF SIDE EFFECTS

"The most striking aspect of thioridazine [Mellaril] therapy is the poverty of side effects.... In its lack of side effects and low toxicity, it is superior to all other tranquilizing drugs tested. For this reason also it is well tolerated by patients, particularly those who are not hospitalized and who frequently discontinue their medication because of dizziness, sleepiness, increased tension or parkinsonism with other drugs."[2]

NEGLIGIBLE SIDE EFFECTS

"Side effects were negligible at all dosage levels: no incidence of parkinsonism or other extrapyramidal symptoms. Minimal sedation, on the whole lower than with other tranquilizing agents. No alteration in liver function, urine or blood. No photosensitivity. Patient acceptability was exceptional: lack of drowsiness, lethargy or 'washed out' feeling, permitted patients to carry on normal everyday activities. Orthostatic hypotension was absent. The initial 'keyed up' tense feeling common to other drugs of this type was absent.... Patients forced to interrupt treatment with other phenothiazine derivatives because of parkinsonism or other extrapyramidal symptoms were able to continue therapy with thioridazine without appearance of parkinsonism."[3]

SINGULARLY FREE OF SIDE EFFECTS

"The extrapyramidal syndrome was not encountered in any of its forms. Dizziness and sleepiness responded to a reduction in dosage. Other side effects did not occur.... It is singularly free from the side effects ordinarily seen with these [phenothiazine] compounds."[4]

ABSENCE OF SIGNIFICANT SIDE EFFECTS

"None of the following toxic effects, so common after administration of the phenothiazines, was present during the period of Thioridazine administration: Parkinsonism or Parkinson-like symptoms, photosensitivity, orthostatic hypotension, bone-marrow depression."[1]

MINIMAL SIDE EFFECTS

"Side effects such as extrapyramidal activity, jaundice and photosensitivity have not been observed in patients treated with Thioridazine [Mellaril]. Extrapyramidal side effects produced by other phenothiazines have disappeared promptly with no deterioration in the behavioral response when these patients have been shifted to Thioridazine."[5]

NO JAUNDICE

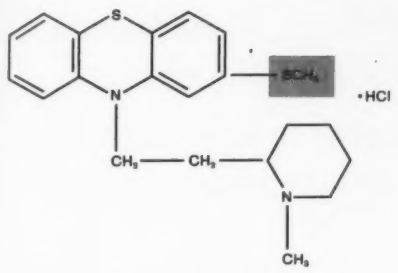
"No allergic reactions were observed such as skin eruptions, jaundice or agranulocytosis. Central nervous system toxicity, as manifested by extrapyramidal effects, seizures, and excitement did not occur despite the use of high doses (up to 2000 mg.) of the drug."[6]

Mellaril®

THIORIDAZINE HCl

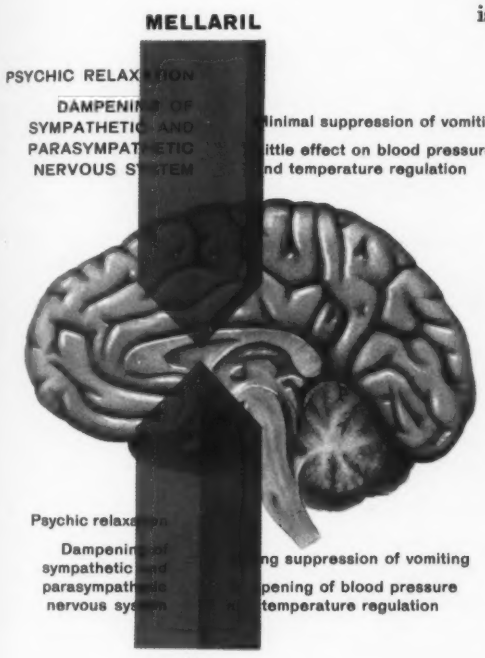
specific, effective tranquilizer • safer at all dosage levels

a new advance in tranquilization:
greater specificity of tranquilizing action plus fewer side effects



Of 109 phenothiazines synthesized by Sandoz, Mellaril was selected as the most promising on the basis of extensive evaluation. The presence of a thiomethyl radical ($S\text{-}CH_3$) in the position conventionally occupied by a halogen in other phenothiazines is unique and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:

1 **A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.**



2 **Less "spill-over" action to other brain areas – hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.**

3 **A notable absence of extrapyramidal stimulation.**

4 **Lack of impairment of patient's normal drive and energy, while achieving psychomotor control in mental and emotional disorders.**

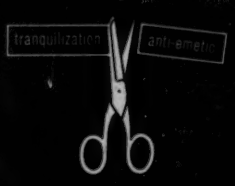
5 **Virtual freedom from toxic effects – jaundice, photosensitivity, skin eruptions, disturbed body temperature regulation, blood forming disorders have been absent in reports currently available.**

These properties add up to a greater margin of safety in general office practice, in ambulatory psychiatric out-patient clinics, and in hospitalized patients.

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels



excellent clinical response

In office practice and in hospitalized patients, Mellaril has proved highly useful for a wide variety of major and minor emotional disorders (such as anxiety, tension, apprehension, alcoholism, agitated psychoneurosis, agitated psychotic states, etc.).

EXTREMELY SATISFACTORY ". . . produced extremely satisfactory results in the broad therapeutic range represented in this series."[3]

POTENT AGENT ". . . appears to be a potent agent in the symptomatic management of a variety of psychiatric states."[4]

MAJOR ADDITION TO THERAPEUTICS "This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

AN ACTIVE AGENT "Thioridazine is an active therapeutic agent. . . . It is effective in a variety of psychiatric disorders, including schizophrenic reactions. . . . The drug is particularly advantageous for a group of schizophrenic patients who are sometimes made worse by other phenothiazine derivatives or Rauwolfia alkaloids. It should also be suitable for treating patients with psychoneuroses and chronic brain syndrome."[6]

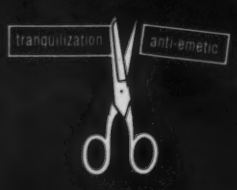
EVEN IN VERY SEVERE CASES "Of the 152 patients treated 25 have been released and they have not suffered a relapse. This proportion is significant if we stop to consider that we are dealing only with acute cases which had been considered hopeless and obviously destined to finish their days in an asylum."[7]

EXCELLENT THERAPEUTIC RESPONSE "Patients with emotional tensions resulting from the stress and strain of life . . . were treated with Mellaril at the dosage level of 10 mg. three times daily. In 94 such patients, 83 obtained an excellent therapeutic response."[8]

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels



"... extremely satisfactory results ..." in a clinical spectrum ranging from minor nervous disorders to severe psychotic disturbances[3]

RESULTS WITH MELLARIL IN 194 PATIENTS[3]

ACUTE PSYCHOTICS	CHRONIC PSYCHOTICS	NEUROTICS
83% satisfactory effect	68% satisfactory effect	57% satisfactory effect
Some cases had complete remission of symptoms. Most were able to return home to useful occupations.	Relief of symptoms in cases permitted easier management and a return to a more or less useful life.	Some cases, complete relief of symptoms. Other cases, partial relief of symptoms.

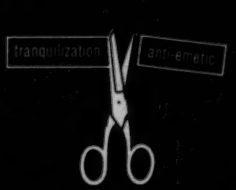
RESULTS WITH MELLARIL IN PATIENTS PREVIOUSLY TREATED WITH OTHER TRANQUILIZERS[3]

DIAGNOSTIC CATEGORY	IMPROVED %	VERY SATISFACTORY %	SATISFACTORY %	UNSATISFACTORY %
SCHIZOPHRENIA				
Acute	89	61	28	11
Chronic paranoid	84.2	31.6	52.6	15.8
Chronic, other	73.9	21.7	52.2	26.1
Residual	57.1	9.5	47.6	42.9
CHRONIC BRAIN SYNDROME	66.6	33.3	33.3	33.3
CHRONIC PSYCHONEUROSIS	62.5	12.5	50	37.5
CHRONIC PSYCHOSOMATIC DISORDERS	75	25	50	25

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels



a guide to administration and dosage

Dosage ranges from 10 mg. three or four times a day in milder situations to 25 mg. three or four times a day for more disturbed patients. In ambulatory psychiatric out-patients, dosages of 50 to 100 mg. three or four times a day have been found adequate. For severely disturbed hospitalized psychotics, dosages of 200 to 300 mg. three times a day may be administered.

Dosage must be individualized according to the condition and degree of response. In all cases, the smallest effective dosage should be determined for each patient.

INDICATION	USUAL STARTING DOSE	TOTAL DAILY DOSAGE RANGE
	ADULTS	
Mental and Emotional Disturbances:		
MILD—where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 mg.
MODERATE—where agitation exists in psychoneurosis, alcoholism, intractable pain, senility, etc.	25 mg. t.i.d.	50-200 mg.
SEVERE—in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.:		
Ambulatory	100 mg. t.i.d.	200-400 mg.
Hospitalized	100 mg. t.i.d.	200-800 mg.
	CHILDREN	
BEHAVIOR PROBLEMS IN CHILDREN	10 mg. t.i.d.	20-40 mg.

PRECAUTIONS: Although possessing a unique structure and a selectivity of action which broadens its therapeutic ratio, the physician should be alert to the possibility of untoward reactions in certain susceptible individuals. In particular, he should watch for potential hemopoietic depression, jaundice or orthostatic hypotension. As with other phenothiazines, Mellaril is contraindicated in severely depressed or comatose states from any cause.

SUPPLIED: MELLARIL Tablets, 10 mg., 25 mg., 100 mg. Bottles of 100.

1. Ostfeld, A. M.: Scientific Exhibit, American Academy of General Practice, San Francisco, April 6-9, 1959. 2. Kinross-Wright, V. J.: Lecture, Clinical Meeting, American Medical Association, Minneapolis, Dec. 4, 1958. 3. Kinross-Wright, V. J.: Scientific Exhibit, Clinical Meeting, American Medical Association, Minneapolis, Dec. 2-5, 1958. 4. Cohen, S.: TP-21, a new phenothiazine, Am. J. Psychiat. *115*:358, Oct. 1958. 5. Glueck, B.: Scientific Exhibit, American Psychiatric Association, Philadelphia, April 27-May 1, 1959. 6. Hollister, L. E., and Macdonald, B. F.: Presented at California Medical Association; Section on Psychiatry, San Francisco, Feb. 25, 1959. 7. Remy, M.: Schweiz. med. Wchnschr. *88*:1221, Nov. 29, 1958. 8. Freed, S. C., in discussion on Thioridazine (Mellaril) in Psychiatric Patients, Hollister, L. E., and Macdonald, B. F., presented at California Medical Association; Section on Psychiatry, San Francisco, Feb. 25, 1959

- controls neurotic and psychotic patients with anxiety, apprehension, nervous tension
- virtual absence of jaundice, parkinsonism, photosensitivity, dermatitis
- minimal sedation and drowsiness
- does not mask organic conditions such as brain tumors, intestinal obstruction, etc., because of lack of anti-emetic action
- increased specificity of action results in greater safety at all dosage levels

SANDOZ

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

PROZINE offers effective aid in the treatment of many organic symptoms arising from moderate to severe emotional disturbance. For example, PROZINE produced improvement in 62 of 74 patients[1] with anxiety neuroses accompanied by nausea, vomiting, tremor, palpitations, or fear. In another 57 patients[2] suffering from nausea and vomiting, PROZINE relieved symptoms in over 90 per cent.

Designed for everyday practice, PROZINE controls motor excitability as well as anxiety and tension by acting on both the hypothalamic and thalamic areas of the brain. Because of this dual action, dosage requirements are low, side-effects minimal.

1. Case reports on file, Wyeth Laboratories. 2. Parks, R.V., and Moessner, G.F.: Dual Approach to Patient Care, Scientific Exhibit, A.A.G.P., April, 1959.

"Nausea and vomiting? Not any more!"

Affects the thalamic and hypothalamic areas of the brain

PROZINE*

meprobamate and promazine hydrochlorides, Wyeth

SPECIFIC CONTROL THROUGH DUAL ACTION

Wyeth®
Philadelphia 1, Pa.

*Trademark

new for total management of itching,[1,2] inflamed,[3,4] infected[5,6] skin lesions

Dermatitis repens [with staph and monilia] 7 weeks duration

Cleared in 5 days

Mycolog ointment

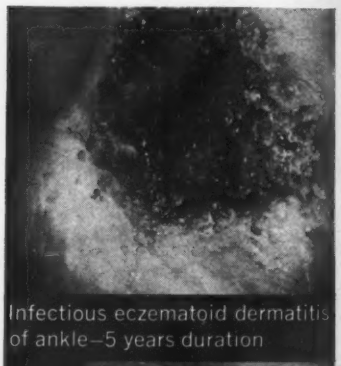
Kenalog, Spectrocin and Mycostatin in Plastibase

antipruritic/anti-inflammatory/antibacterial/antifungal

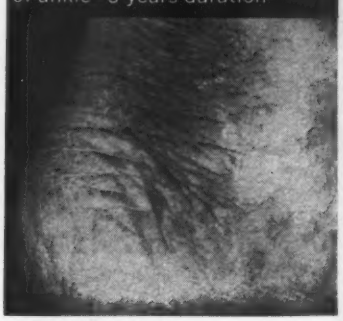
Mycolog Ointment – containing the new superior topical corticoid Kenalog – reduces inflammation,[3,4] relieves itching,[1,2] and combats or prevents bacterial, monilial and mixed infections.[5-7] It is extremely well tolerated, and assures a rapid, decisive clinical response for most infected dermatoses.

> **"Thirty-one of 38 patients . . . obtained excellent or good control of dermatological lesions . . . [Mycolog] was highly effective, particularly in the management of mixed infections. Several recalcitrant eruptions which had not responded to previous therapy were remarkably responsive to the daily application of this preparation over periods of 2 to 3 weeks."[5]**

For total management of itching, inflamed, infected skin lesions, Mycolog contains triamcinolone acetonide, an outstanding new topical corticoid for prompt, effective relief of itching, burning and inflammation[1-4] – neomycin and gramicidin for powerful antibacterial action[7] – and nystatin for treating or preventing Candida (Monilia) albicans infections.[8,9]



Infectious eczematoid dermatitis of ankle–5 years duration



Cleared in 20 days

Application: Apply 2 to 3 times daily. Supply: 5 Gm. and 15 Gm. tubes. Each gram supplies 1.0 mg. (0.1%) triamcinolone acetonide, 2.5 mg. neomycin base, 0.25 mg. gramicidin, and 100,000 units nystatin in PLASTIBASE.

References: 1. Shelmire, J.B., Jr.: Monographs on Therapy 3:164 (Nov.) 1958. • 2. Nix, T.E., Jr., and Derbes, V.J.: Monographs on Therapy 3:123 (Nov.) 1958. • 3. Robinson, R.C.V.: Bull. School of Med., U. Maryland 43:54 (July) 1958. • 4. Sternberg, T.H.: Newcomer, V.D., and Reisner, R.M.: Monographs on Therapy 3:115 (Nov.) 1958. • 5. Clark, R.F., and Hallett, J.J.: Monographs on Therapy, 3:153 (Nov.) 1958. • 6. Smith J.G., Jr.; Zawisza, R.J., and Blank, H.: Monographs on Therapy, 3:111 (Nov.) 1958. • 7. Monographs on Therapy, 3:137 (Nov.) 1958. • 8. Howell, C.M., Jr.: North Carolina M.J. 19:449 (Oct.) 1958. • 9. Bereston, E.S.: South. M.J. 50:547 (April) 1957.

And whatever the topical corticoid need, a suitable Squibb formulation is available—Kenalog-S Lotion—7½ cc. plastic squeeze bottles. Each cc. supplies 1.0 mg. (0.1%) triamcinolone acetonide, 2.5 mg. neomycin base and 0.25 mg. gramicidin. Kenalog Cream, 0.1%—5 Gm. and 15 Gm. tubes. Kenalog Lotion, 0.1%—15 cc. plastic squeeze bottles. Kenalog Ointment, 0.1%—5 Gm. and 15 Gm. tubes.

RELIABILITY CONTROL PRODUCT

SQUIBB

Squibb Quality — the Priceless Ingredient

'SPECTROCRIN'®, 'MYCOSTATIN'®, 'PLASTIBASE'®, 'MYCOLOG' AND 'KENALOG' ARE SQUIBB TRADEMARKS

for the tense and nervous patient

relief comes fast and comfortably

–does not produce autonomic side reactions
–does not impair mental efficiency, motor control, or normal behavior.

Usual Dosage: One or two 400 mg. tablets t.i.d.

Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets or as MEPROTABS*—400 mg. *unmarked,* coated tablets.

Miltown®

meprobamate (Wallace)

WALLACE LABORATORIES / *New Brunswick, N. J.*

CH-8284

NOW...

a more effective uricosuric agent for chronic gout and gouty arthritis

flexin®

ZOXAZOLAMINE*

"...more potent mg. per mg. than any other oral preparation."[1]

The minimum effective dose of FLEXIN zoxazolamine is substantially lower than that of any other uricosuric drug.[1,2] This greater potency on smaller dosage provides unmatched clinical advantages in the management of the gouty patient:

- increases urinary urate excretion four-to eightfold
- markedly reduces serum uric acid
- lessens frequency and severity of acute attacks
- facilitates resorption of existing tophi...prevents formation of new tophi
- minimizes side effects...maintains effectiveness indefinitely
- helps return patients to normal activities

Supplied: FLEXIN® Tablets, 250 mg., scored, yellow, bottles of 50.

Recommended Dosage: 125 mg. of FLEXIN® zoxazolamine, three or four times a day with food or after meals.

Should concomitant analgesia be desired, TYLENOL® acetaminophen will not counteract the uricosuric effect of zoxazolamine.

(1) Talbot, J. H.: Arth. & Rheumat. *2*:182 (April) 1959. (2) Burns, J. J.; Yü, T. F.; Berger, L., and Gutman, A. B.: Am. J. Med. *25*:401 (Sept.) 1958.

*U.S. Patent Pending

McNEIL LABORATORIES, INC • PHILADELPHIA 32, PA.

230A59

McNEIL

IMPROVING ON NATURE

This great river has been made more valuable to man because its power has been harnessed by this dam. Proloid, the only improved but complete thyroglobulin, offers similar evidence of man's ingenuity in improving on nature.

Proloid restores patients to a euthyroid state – but does so safely and smoothly. Our exclusive double assay assures unvarying potency from prescription to prescription. Three grains of Proloid daily is the average dosage for patients with mild forms of hypothyroidism.

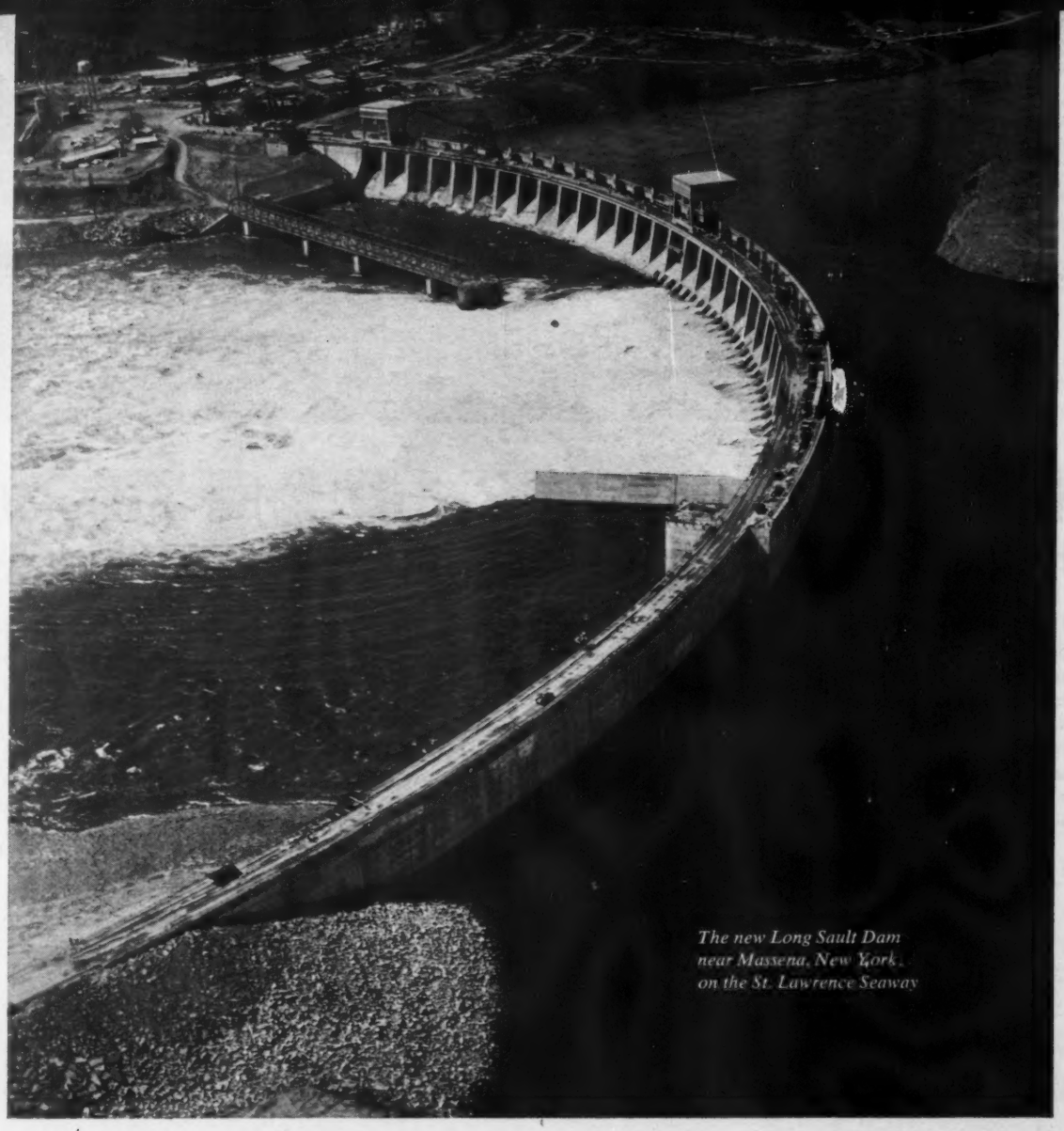
dependable safe economical

THYROID

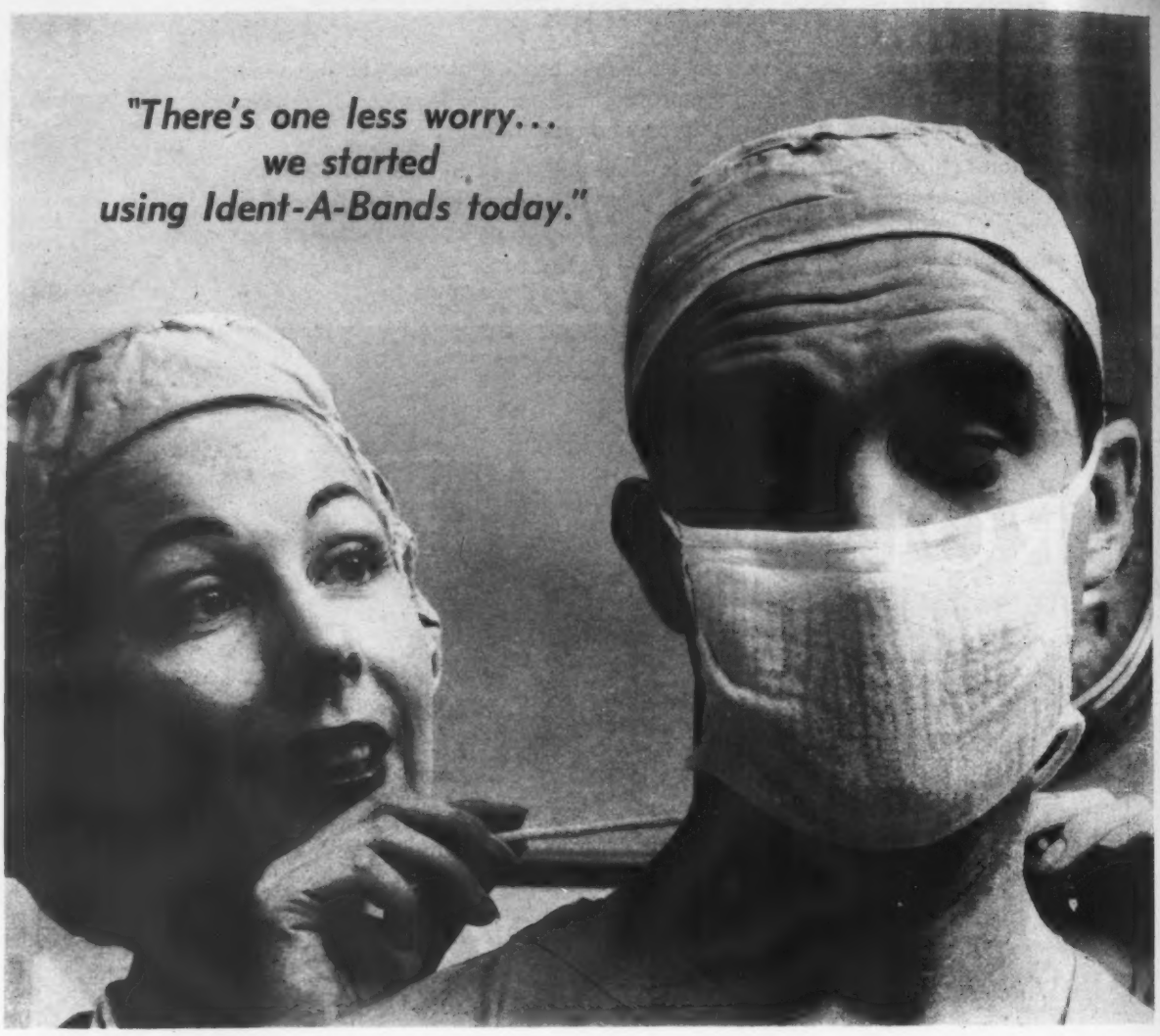
PROLOID®

WARNER CHILCOTT

MORRIS PLAINS, N.J.



The new Long Sault Dam near Massena, New York, on the St. Lawrence Seaway



Hollister *Ident-A-Band*®, the *original*, the *positive* all-patient, on-patient identification

OB nurses stopped worrying about identification mixups eight years ago when they started using Hollister Ident-A-Bands. And now this *surgical* nurse has one less worry—thanks to Ident-A-Band and the all-patient, on-patient identification idea now recommended by the American Hospital Association. Ident-A-Band leaves no room for doubt because it's securely sealed—in fact, *permanently* sealed—in the few seconds it takes to custom-fit the band.

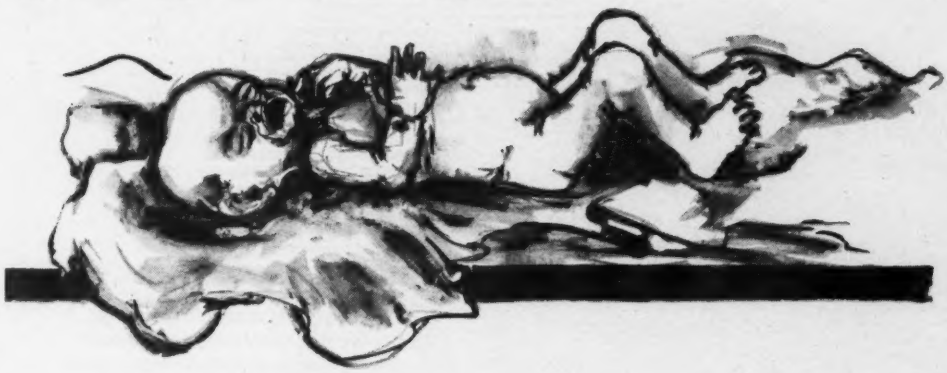
Ident-A-Band offers the positive protection you should have. And yet it's so skin-soft that patients know you have thought of their comfort as well as safety. Ident-A-Band is so easy to apply that it can be done in the admitting office in seconds. It's no wonder that Ident-A-Band, the original all-patient identification system, is endorsed by leading administrators everywhere. In addition to its original positive seal, Ident-A-Band now offers two new finger-pressure seals, thus meeting every need of every department. Write for samples, prices and information.

HOLLISTER® INCORPORATED

Hollister Incorporated, 833 North Orleans Street, Chicago 10

VERSATILE FURACIN

effective by intrapleural instillation[1]



the situation: Four-month-old infant with staphylococcal pneumonia and empyema resistant to most antibiotics was allergic to antibiotic chosen after sensitivity tests. Thoracentesis produced 30-40 cc. of creamy, purulent fluid. Organism was Staphylococcus aureus, coagulase positive.

then Furacin was instilled: 0.2% Solution was diluted equally with physiologic saline and 10 cc. of mixture instilled twice daily into pleural space, with suction catheter clamped off for 1 hour. Fluid almost immediately became thinner and less viscous. Twenty-four hours later infant was less irritable, voluntarily started taking food. Instillations stopped. FURADANTIN® Oral Suspension prescribed. Recovery uneventful.

1. Perkins, J. L.: Kansas State M. J. (to be published).

FURACIN®

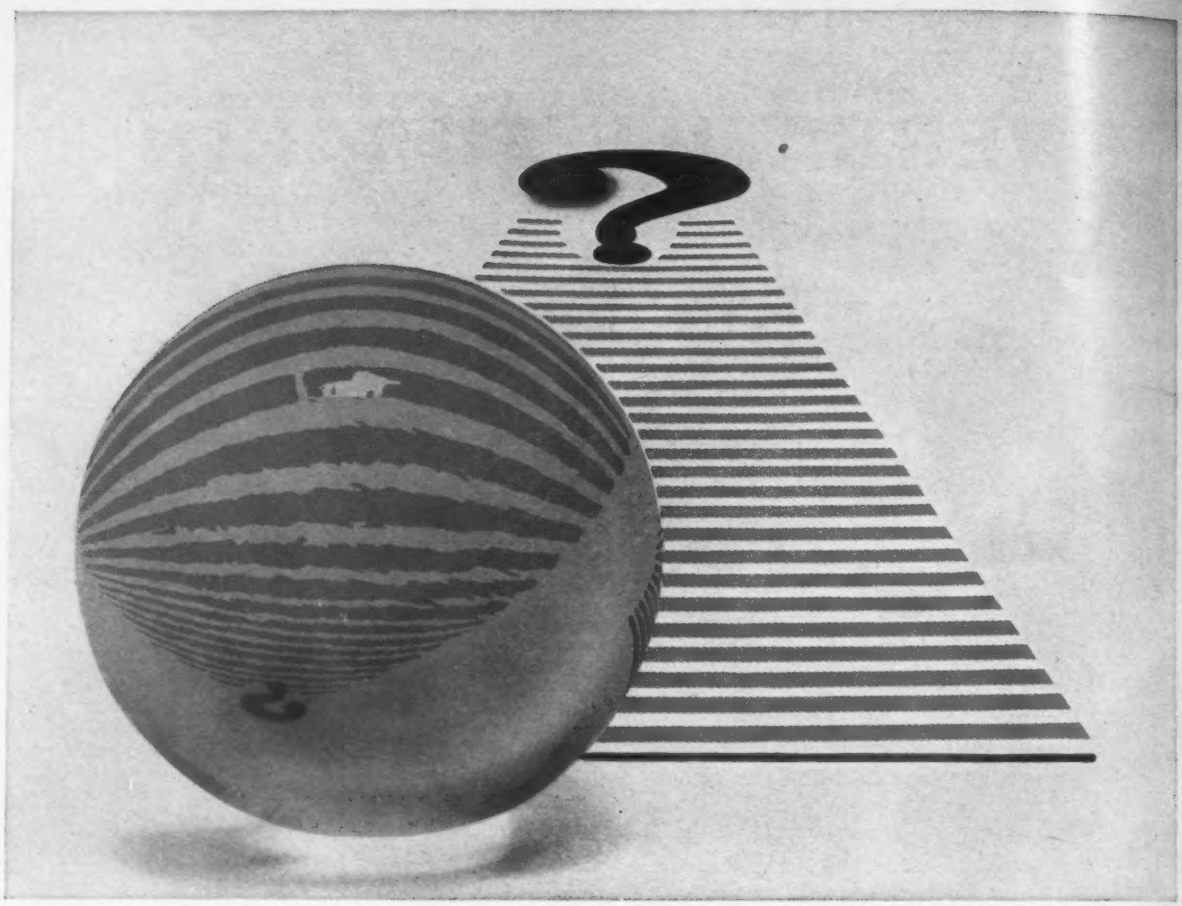
brand of nitrofurazone

FURACIN has been in clinical use for more than 13 years. Today it is the most widely prescribed single topical antibacterial agent. Like other nitrofurans, FURACIN remains effective, even in pus, sera or exudates, against pathogens which have developed—or are prone to develop—resistance to antibiotics.

FURACIN, in a water-miscible base of polyethylene glycols, is available in a number of dosage forms. Included are Soluble Dressing, Soluble Powder, Solution and Cream. Also in Vaginal Suppositories, Inserts, and in special formulations for eye, ear and nose.

NITROFURANS—a unique class of antimicrobials—neither antibiotics nor sulfonamides

EATON LABORATORIES, NORWICH, NEW YORK



what lurks beyond the broad spectrum?

"Broad spectrum" has evolved into an especially apt term to describe a growing number of "specialized" antibiotics. These provide the best means of destroying pathogenic bacteria which range all the way from large protozoa through gram-negative and gram-positive bacteria to certain viruses at the far end of the spectrum.

But beyond the spectrum lurk pathogenic fungi. Aggressive infections often require intensive broad spectrum antibiotic attack. It becomes more apparent every day that fungal superinfections may occur during or following a course of such therapy.[1,2] Long term debilitating disease, diabetes, pregnancy, corticosteroid therapy, and other causes may predispose to such fungal infections[1,3,4] as iatrogenic moniliasis. These facts complicate the administration of antibiotics.

Mysteclin-V controls both – infection and superinfection. Mysteclin-V makes a telling assault on bacterial infections and, in addition, prevents the potentially dangerous monilial overgrowth.[2,5-8] Mysteclin-V is a combination of the phosphate complex of tetracycline – for reliable control of most infections encountered in daily practice – and Mycostatin, the first safe antifungal antibiotic.

Case history after case history marked "recovered" provides clinical evidence of the special merit of this advance in specially designed antibiotics. When you prescribe Mysteclin-V, you provide "broad therapy" with extra protection that extends beyond the spectrum of ordinary antibiotics.

'MYSTECLIN'®, 'SUMYCIN'®, AND 'MYCOSTATIN'® ARE SQUIBB TRADEMARKS

Supplied:	Tetracycline Phosphate Complex equiv. Tetracycline HCl (mg.)	Mycostatin units
Mysteclin-V Capsules (per capsule)	250	250,000
Mysteclin-V Half-Strength Capsules (per capsule)	125	125,000
Mysteclin-V Suspension (per 5 cc.)	125	125,000
Mysteclin-V Pediatric Drops (per cc. – 20 drops)	100	100,000

References: 1. Dowling, H. F.: Postgrad. Med. 23:594 (June) 1958. 2. Gimble, A. I.; Shea, J. G., and Katz, S.: Antibiotics Annual 1955-1956, New York, Medical Encyclopedia Inc., 1956, p. 676. 3. Long, P. H., in Kneeland, Y., Jr., and Wortis, S. B.: Bull. New York Acad. Med. 33:552 (Aug.) 1957. 4. Rein, C. R.; Lewis, L. A., and Dick, L. A.: Antibiotic Med. & Clin. Ther. 4:771 (Dec.) 1957. 5. Stone, M. L., and Mersheimer, W. L.: Antibiotics Annual 1955-1956, New York, Medical Encyclopedia Inc., 1956, p. 862. 6. Campbell, E. A.; Prigot, A., and Dorsey, G. M.: Antibiotic Med. & Clin. Ther. 4:817 (Dec.) 1957. 7. Chamberlain, C.; Burros, H. M., and Borromeo, V.: Antibiotic Med. & Clin. Ther. 5:521 (Aug.) 1958. 8. From, P., and Alli, J. H.: Antibiotic Med. & Clin. Ther. 5:639 (Nov.) 1958.

Mysteclin - V

SQUIBB TETRACYCLINE PHOSPHATE COMPLEX (SUMYCIN) AND NYSTATIN (MYCOSTATIN)

RELIABILITY

SQUIBB

Squibb Quality – the Priceless Ingredient

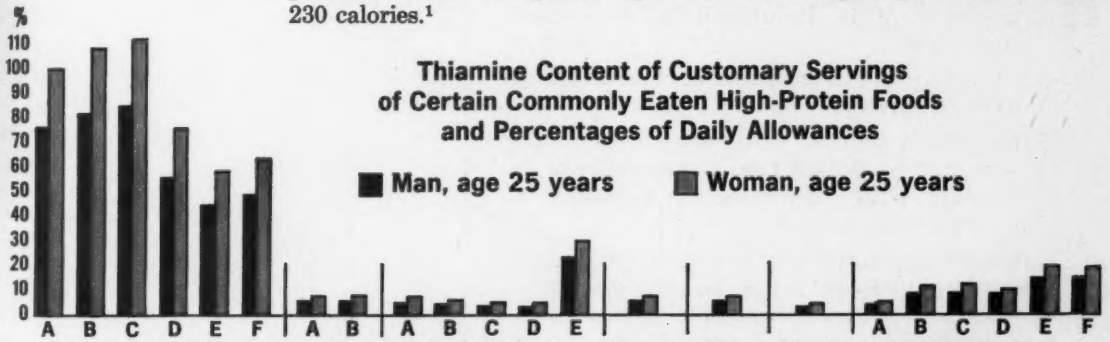
Pork...

Highest in Thiamine Among High-Protein Foods

Pork meat in its many delicious forms—chops, steak, ham, Canadian-style bacon, link sausage—provides more thiamine than any other commonly eaten high-protein food.

In the planning of diets adequate in protein, variety may be obtained by choosing from all meats, fish, poultry, eggs, milk, and high-protein vegetables. But some high-protein foods are poor in thiamine content. Because pork meat outranks all other high-protein foods in its contribution of thiamine, its frequent inclusion in the daily menu ensures adequacy in this important nutrient.

The other nutritional values of pork are also substantial. For example, average servings of 3½ ounces (100 Gm.) of lean pork supply 34 grams of protein, 9 grams of fat, and, like all other meats, significant amounts of all the B vitamins and the minerals iron, phosphorus, magnesium, and potassium. The average serving of 100 Gm. lean pork provides a modest 230 calories.[1]



Thiamine Content of Customary Servings of Certain Commonly Eaten High-Protein Foods and Percentages of Daily Allowances

■ Man, age 25 years ■ Woman, age 25 years

Cooked Lean Pork Meats (100 grams)

A. Chop, loin center cut 3" x 2¼" x 1" 1.18 mg. B_1
B. Roast, sirloin, 2 slices 2½" x 1" x ½" 1.27 mg. B_1
C. Bacon, Canadian-style 4 slices, 1.32 mg. B_1
D. Ham, roast, cured shank end 2½" x 2" x 1", 0.90 mg. B_1
E. Ham, Steak, fresh, 2 slices 3" x 1½" x ½", 0.68 mg. B_1
F. Sausage, link, 2½ links average, 0.76 mg. B_1

Poultry (100 grams)

A. Chicken, roasted 3 slices 3½" x 2½" x ¼", 0.080 mg. B_1
B. Turkey, roasted average, 3 slices 3½" x 2½" x ¼", 0.081 mg. B_1

Fish and Sea Food (100 to 240 grams)

A. Cod Fish cakes, 1 large 125 grams, 0.071 mg. B_1
B. Halibut steak, cooked 100 grams, 0.061 mg. B_1
C. Salmon, canned, ½ cup, 100 grams, 0.030 mg. B_1
D. Tuna, canned, drained ½ cup solids, 100 grams, 0.050 mg. B_1
E. Oysters, meat only, raw 1 cup, 240 grams, 0.350 mg. B_1

Eggs, 2 (108 grams)

0.080 mg. B_1

Milk (8 fl. oz., 245 grams)

0.090 mg. B_1

Cheese

cheddar, American, 60 grams, or cottage cheese, 100 grams. Both, 0.020 mg. B_1

High Protein Vegetables (80 to 130 grams)

A. Beans, canned or cooked ½ cup, approx. 130 grams, 0.060 mg. B_1
B. Lentils, dried, cooked, ½ cup, 95 grams, 0.130 mg. B_1
C. Asparagus, cooked, ½ cup cut pieces, 100 grams, 0.130 mg. B_1
D. Beans, lima, green, cooked ½ cup, 80 grams, 0.110 mg. B_1
E. Peas, black-eyed, immature seeds, cooked, ½ cup, 80 grams, 0.230 mg. B_1
F. Peas, green, cooked, ½ cup, 80 grams, 0.200 mg. B_1

1. Leverton, R. M., and Odell, G.V.: The Nutritive Value of Cooked Meat, Oklahoma Agricultural Experiment Station, Oklahoma State University, Miscellaneous Publication MP-49, 1958.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

American Meat Institute
Main Office, Chicago . . . Members Throughout the United States

NEW RESEARCH SHOWS LINOLEIC ACID ESSENTIAL TO INFANT NUTRITION

Hansen's and co-workers' research [1,2,3] on linoleic acid indicates these three important facts:

I. Linoleic acid is essential in infant nutrition.

II. Linoleic acid is essential for maintaining skin integrity.

III. Optimum caloric efficiency is attained when 4 to 5% of the caloric intake is linoleic acid – the amount present in normal human milk.

Baker's Modified Milk—because it replaces butterfat with suitable vegetable oils – provides enough linoleic acid for both skin integrity and optimum caloric efficiency.

Baker's Modified Milk provides 6% of the calories as linoleic acid – an important factor in Optimum Nutrition.*

OPTIMUM NUTRITION

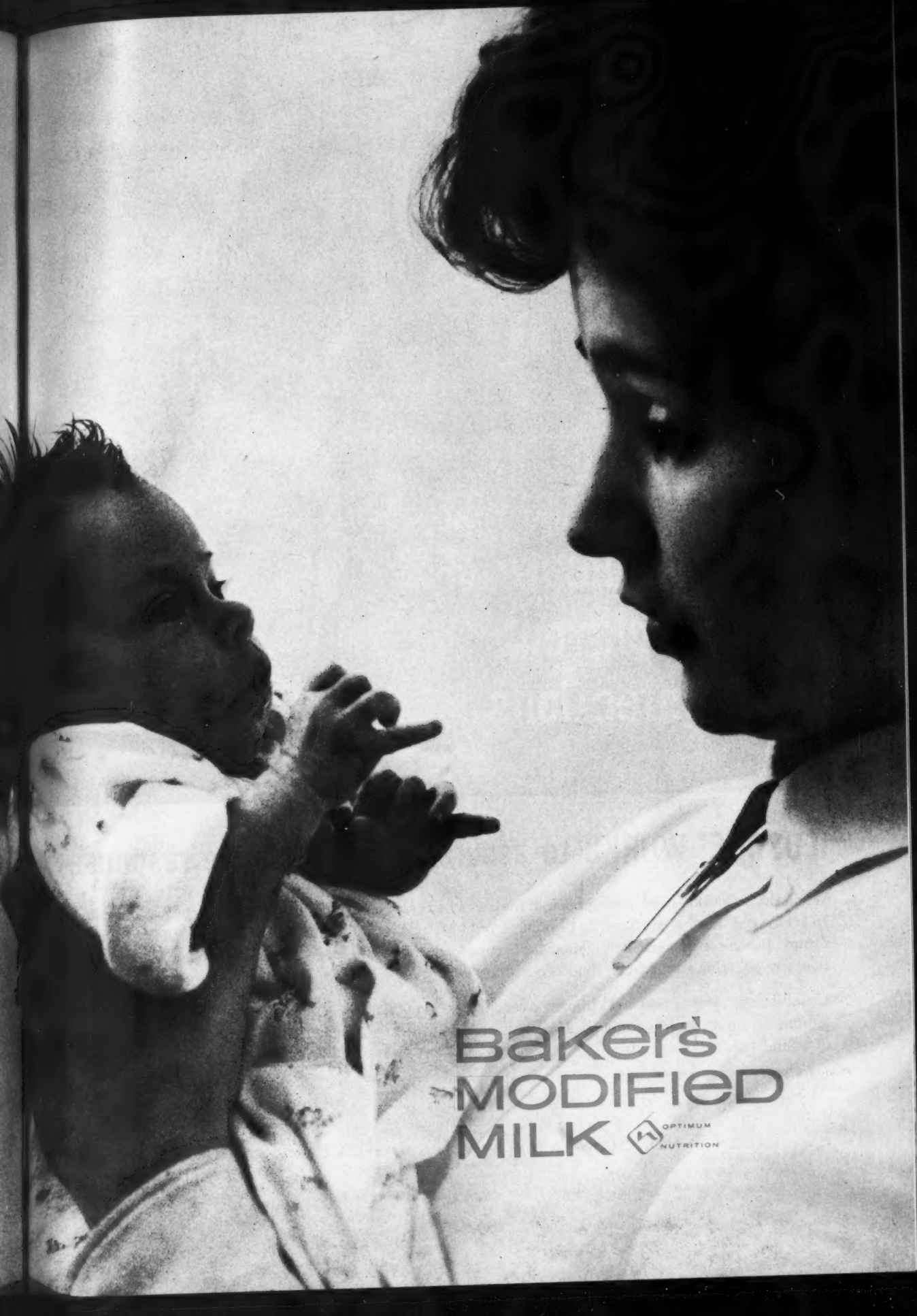
* providing all the normal dietary requirements plus a reserve for stress situations.

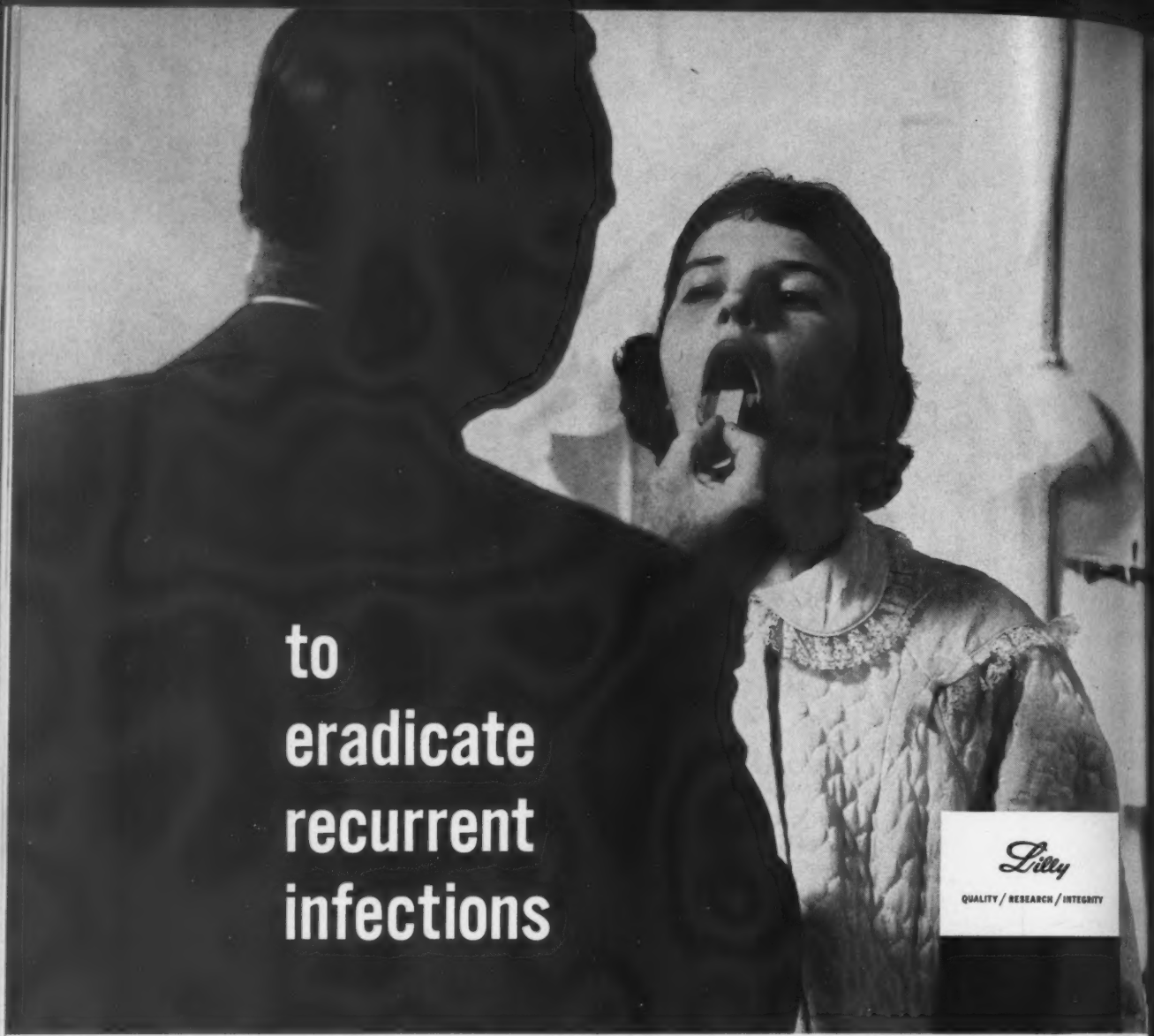
1. Wiese, Hilda F., et al.: J. Nutrition 66: 345, 1958
2. Adam, Doris J. D., et al.: Ibid.: 555
3. Hansen, A. E., et al.: Ibid.: 565

THE BAKER LABORATORIES, INC.

Makers of VARAMEL—a flexible formula

CLEVELAND 3, OHIO


Baker's
MODIFIED
MILK
OPTIMUM
NUTRITION



ILOSONE® WORKS to assure a more decisive response

When the infection keeps coming back, it may well be that a more decisive antibiotic attack is indicated. In such cases, Ilosone consistently provides a prompt, high level of antibacterial activity in the patient's serum. Ilosone is bactericidal against both streptococci and pneumococci and has been reported particularly effective against staphylococcus infections in clinical investigation.[1]

Usual dosage: For adults and children over fifty pounds, 250 mg. every six hours. For optimal effect, administer on an empty stomach. Ilosone is supplied in Pulvules® of 125 mg. and 250 mg., in bottles of 24 and 100.

1. J.A.M.A., *170*:184 (May 9), 1959.

Ilosone® (propionyl erythromycin ester, Lilly)

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.

932628

Conventions and meetings

American College of General Practitioners in Osteopathic Medicine and Surgery, midyear clinical conference, Hotel Fort Des Moines, Des Moines, Iowa, November 8-10. Program Chairman, Jean F. LeRoque, 3305 S. W. Ninth St., Des Moines 15. Secretary, A. J. Schramm, 5880 San Vicente Blvd., Los Angeles 19.

American College of Osteopathic Obstetricians and Gynecologists, annual meeting, Hilton Hotel, San Antonio, Texas, February 22-25. Secretary, Arthur A. Speir, Box 66, Merrill, Mich.

American College of Osteopathic Pediatricians, annual meeting, Hilton Hotel, San Antonio, Texas, February 22-25. Secretary, Myron D. Jones, Osteopathic Hospital of Kansas City, 926 E. 11th St., Kansas City 6, Mo.

American College of Osteopathic Surgeons, annual clinical assembly, Hotel Statler, Los Angeles, October 25-29. Program Chairman, Don E. Ranney, 5435 Woodward Ave., Detroit 2. Executive Secretary, Mrs. E. F. Martin, Box 488, Coral Gables 34, Fla.

American Osteopathic Academy of Orthopedics, annual clinical assembly, Hotel Statler, Los Angeles, October 25-29. Secretary, J. Paul Leonard, 2673 W. Grand Blvd, Detroit 8.

American Osteopathic Association, Sixty-Fourth Annual Convention, Muehlebach Hotel, Hotel Aladdin, Hotel Phillips, Kansas City Auditorium, Kansas City Mo., July 11-15. Program Chairman, Raymond L. Ruberg, 4614 Wayne Ave., Philadelphia 44.

American Osteopathic College of Anesthesiologists, annual clinical assembly, Hotel Statler, Los Angeles, October 25-29. Program Chairmen, Glenn F. Gordon, 1630 Del Valle Ave., Glendale 8, Calif., and John C. Bell, 2434 Glendower Ave., Los Angeles 27. Secretary, Crawford M. Esterline, Box 155, Kirksville, Mo.

American Osteopathic College of Proctology, annual clinical assembly and refresher course, Mayo Hotel, Tulsa, March 28-April 1. Secretary, Eugene W. Egle, Lackland Clinic, 2335 Brown Rd., St. Louis 14.

American Osteopathic College of Radiology, annual clinical assembly, Hotel Statler, Los Angeles, October 25-29. Secretary, F. A. Turfler, Jr., South Bend Osteopathic Hospital, 2515 E. Jefferson Blvd., South Bend 15, Ind.

An EDGE on them all
Cutting efficiency and maximum blade performance has always been the surgeon's first consideration when choosing a surgical blade. BARD-PARKER offers you a blade made with the same consideration in mind . . . a blade of carbon steel of course . . . so superior for fine cutting edges.
B-P RIB-BACK Blades are now available . . .
in the Puncture Proof Sterile Blade package that can be autoclaved.
in the RACK-PACK package—blades pre-racked ready for sterilization.
in the CONVENTIONAL package—six of one size in a rust-proof wrapper.
It's Sharp
Ask your dealer
B-P BARD-PARKER COMPANY, INC.
DANBURY, CONNECTICUT
A DIVISION OF BECTON, DICKINSON AND COMPANY
B-P • RIB-BACK • IT'S SHARP • RACK-PACK are trademarks of BARD-PARKER

American Osteopathic Hospital Association, annual clinical assembly, Hotel Statler, Los Angeles, October 25-29. Executive Secretary, Mr. Emil Herbert, 4000 Brady St., Davenport, Iowa.

Colorado: See Rocky Mountain Osteopathic Conference.

Eastern States Osteopathic Society of Proctology, annual meeting, Hotel Bellevue-Stratford, Philadelphia, November 7-8. Program Chairman, Herbert J. Lipkin, 1841 N. 18th St., Philadelphia 21. Secretary, Leroy W. Lovelidge, Jr., 201 E. Orange St., Lancaster, Pa.

Hawaii, annual meeting, October 16-17, Hawaiian Village Hotel, Honolulu. Program Chairman, Frank O. Gladding, 504 Kauikeolani Bldg., Honolulu 13. Secretary, Joseph M. Thomas, 1541 S. Beretania St., Honolulu 14.

Indiana, annual meeting, Marcott Hotel, Indianapolis, May 14-17. Program Chairman, William Lynn Adams, 1500 N. Delaware St., Indianapolis 2. Secretary, Arabelle B. Wolf, 4840 N. Michigan Rd., Indianapolis 8.

Louisiana, annual meeting, New Orleans, October 22-24. Program Chairman, W. Luther Stewart, 525 Johnston St., Alexandria 3. Secretary, V. L. Wharton, 406-07 Weber Bldg., Lake Charles.

Maine, midyear meeting, Waterville, December 3-5. Executive Secretary, Mr. George R. Petty, Monmouth.

IMAGINE STOPPING A GIANT PLANE
TRAVELING AT 300 MILES AN HOUR,
IN ITS OWN LENGTH

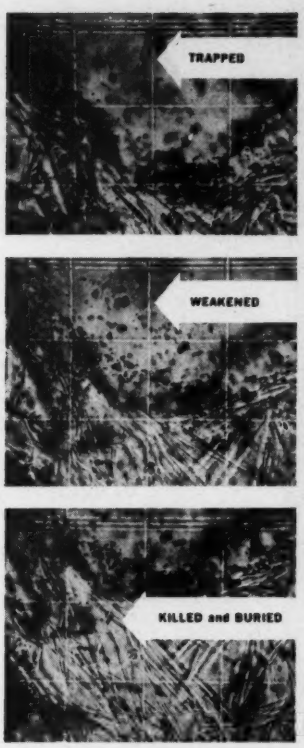
unique action of NEW *Immolin*®

traps,

"freezes,"

immobilizes sperm

- within 1/4 second of contact
- before traveling 20 microns



These pictures demonstrate the potent spermicidal action of the IMMOLIN Vaginal Cream-Jel matrix as a viable sperm "freezes," weakens and dies – within ¼ second – before it has traveled 20 microns. These photomicrographs, taken through a phase-contrast microscope and enlarged 600 times, are the first ever obtained of a single sperm.

1. **TRAPPED** –This highly motile and viable sperm becomes nonreproductive the instant it contacts the outer edge of the IMMOLIN Cream-Jel matrix.
2. **WEAKENED** – Devitalized, and no longer motile, the sperm swerves from its line of travel and is pulled aside by the spreading matrix.
3. **KILLED and BURIED** – Motion stops, whiplash ceases as the sperm succumbs to the matrix. The dead sperm is trapped deep in the impenetrable IMMOLIN matrix.

for use without diaphragm

VAGINAL CREAM-JEL matrix

SIMPLICITY, EFFECTIVENESS, DEPENDABILITY– IMMOLIN Cream-Jel offers effective conception control to patients who want security without use of a diaphragm. Esthetically elegant, IMMOLIN Cream-Jel acts swiftly, gently and with finality. On contact with the matrix, spermatozoa are trapped and killed.

EXTENSIVE 28-MONTH CLINICAL STUDY DEMONSTRATES EXTREMELY LOW PREGNANCY RATE – A rate of 2.01 per hundred woman-years of exposure is reported[1] in 101 fertile, married women relying exclusively on IMMOLIN Cream-Jel. **There were no unplanned pregnancies among women using IMMOLIN Vaginal Cream-Jel for six months or longer.** "This extremely low pregnancy rate indicates that Immolin cream-jel used without an occlusive device is an efficient and dependable contraceptive."

COMBINES BEST FEATURES OF CREAM AND JELLY– Snowy white, odorless IMMOLIN Cream-Jel combines the soft, pleasant emollience of a cream with the smoothness of a jelly, yet minimizes overlubrication and leakage–increases "motivation" to use faithfully.

Supplied: #900 Package–75 gram tube with improved measured dose applicator and attractive, zippered plastic case.

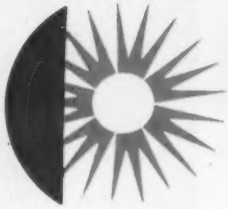
#905 Package – 75 gram tube only.

1. Goldstein, L. Z.: Obst. & Gynec. 10:133 (Aug.) 1957.

Active ingredients: Methoxypolyoxyethyleneglycol 550 laurate 5%, Nonylphenoxypolyethoxyethanol 1%.

IMMOLIN is a registered trademark of Julius Schmid, Inc.

JULIUS SCHMID, INC.
423 West 55th Street, New York 19, N. Y.



NIAMID*

the mood brightener

EFFECTIVE AND WELL TOLERATED

in depression

NIAMID has been found to be strikingly effective and well tolerated in a broad range of depressive states including a wide variety of the milder depressive syndromes, as well as the masked depression so frequently seen in general practice. These syndromes include: depression associated with the menopause, postoperative depressive states and senile depression; depression accompanying chronic or incurable illness, such as gastrointestinal and cardiovascular disorders and inoperable cancer.

in angina pectoris

NIAMID, in intensive clinical tests, has proved to have a high degree of safety and to be a valuable adjunct in the management of the anginal syndrome. NIAMID produces striking symptomatic improvement in angina patients—markedly reduces the pain, severity and frequency of anginal episodes, reduces nitroglycerin requirements, and provides an increased sense of well-being. Since dramatic improvement is seen in some patients, it is wise to advise the patient against overexertion—his disorder still holds potential dangers despite relief of symptoms.

DOSAGE: Start with 75 mg. daily in single or divided doses. After a week or more, adjust the dosage, depending upon patient response, in steps of one or one-half 25 mg. tablet. Once improvement is seen, gradually reduce dosage to the maintenance level. Many patients respond to NIAMID within a few days, others in 7 to 14 days. A few patients may require as much as 200 mg. daily over a longer period of time before significant improvement is seen.

PRECAUTIONS: Side effects are infrequent and mild, and often lessened or eliminated by a reduction in dosage. Hypotensive effects have rarely been noted and no jaundice or other evidence of liver damage has been reported in patients receiving NIAMID. However, in patients with a history of liver disease, the possibility of hepatic reactions should be kept in mind.

SUPPLY: NIAMID is available as 25 mg. (pink) and 100 mg. (orange) scored tablets.

Already clinically proved in several thousand patients—

Complete references and a Professional Information Booklet giving detailed information on NIAMID are available on request.

Pfizer *Science for the world's well-being*

*Trademark for brand of nialamide

PFIZER LABORATORIES Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York

"All my patients get an extra lift with 'Beminal' Forte"

BECAUSE JUST ONE CAPSULE A DAY provides massive doses of vitamin B and therapeutic amounts of vitamin C,* "Beminal" Forte amply meets the need when requirements are high and reserves are low. And when the need is particularly acute, for instance, during long term illness or to accelerate tissue repair, 2 or 3 capsules may be given daily.

Supplied: No. 817 — Bottles of 100 and 1,000 capsules.

FOR PATIENTS ON SPECIAL DIETS, IN INFECTION, OR PRE- AND POST-OP

prescribe

"BEMINAL"® FORTE

Therapeutic B Factors with Vitamin C

Averst Laboratories • New York 16, N. Y. • Montreal, Canada

Vitamin C content recently increased to 250 mg. per capsule without increase in cost.

Maryland, annual meeting, Park Plaza Hotel, Baltimore, October 25. Program Co-chairmen, Grace R. McMains, Cambridge Arms Apartments, Charles and 34th Sts., Baltimore 18, and Ernest R. MacDonald, 309 Meyerhoff Bldg., Charles and Saratoga Sts., Baltimore 1. Secretary, Dr. MacDonald.

Massachusetts, annual meeting, Somerset Hotel, Boston, January 16-17. Program Chairman, Stuart K. Partridge, 47 Washington St., Malden 48. Executive Secretary, Mrs. Gladys M. Stockdale, 524 California St., Newtonville 60.

Minnesota, annual meeting, Minneapolis, May 5-7. Secretary, E. R. Komarek, 301 Granite Exchange Bldg., St. Cloud.

Missouri, annual meeting, Sheraton-Jefferson Hotel, St. Louis, October 14-16. Program Chairman, Gilbert H. Kroeger, Reid Hospital and Clinic, 17th and Central Aves., Bethany. Executive Secretary, Mr. Paul D. Adams, 325 E. McCarty St., Jefferson City.

New Jersey, annual meeting, Traymore Hotel, Atlantic City, March 11-13. Program Chairman, Joseph V. Huffnagle, 101 Bowood Dr., Haddonfield. Executive Secretary, Mr. R. P. Chapman, 342 W. State St., Trenton 8.

New York, annual meeting, Park Sheraton Hotel, New York City, October 16-17. Program Chairman, Leonard V. Strong, Jr., 133 E. 58th St., New York 22. Secretary, C. Fred Peckham, 38 E. Bridge St., Oswego.

North Carolina, annual meeting, Battery Park Hotel, Asheville, October 22-24. Program Chairman, S. Dales Foster, 710 Public Service Bldg., Asheville. Secretary, Walter C. Eldrett, 310 S. Main St., Hendersonville.

Ohio, refresher course, Dayton-Biltmore Hotel, Dayton, October 24-25. Program Chairman, Roger E. Bennett, 1613 Gage Dr., Middletown. Executive Secretary, Mr. William S. Konold, 53 W. Third Ave., Columbus 1.

Oklahoma, annual meeting, Hotel Tulsa, Tulsa, November 4-6. Program Chairman, John W. Morrow, 1222 W. Main St., Woodward. Executive Secretary, Mr. Walter L. Gray, 210-12 Braniff Bldg., Oklahoma City.

Ontario, annual meeting, Park Hotel, Niagara Falls, May 2-4. Program Chairman, M. Paul Christianson, 901-02 Pigott Bldg., Hamilton. Secretary, Eric B. Johnston, 2920 Bloor St., W., Toronto 18.

Pennsylvania, annual meeting, Bellevue-Stratford Hotel, Philadelphia, November 19-21. Program Chairman, Charles Lichtenwalner, Jr., 379 Chestnut St., Pottstown. Executive Secretary, Mr. Thomas M. Fogarty, 1941 Market St., Harrisburg.

Rocky Mountain Osteopathic Conference, Broadmoor Hotel, Colorado Springs, March 30-April 3. Secretary, C. R. Starks, 1459 Ogden St., Denver 18.

State and national boards

Arizona Osteopathic Board of Registration and Examination in Medicine and Surgery has elected Thomas J. Odom, Tucson, president. W. A. Seydler, Stanfield, is vice president, and Russell Peterson, Phoenix, is secretary-treasurer. Drs. Odom and Seydler were reappointed to the Board as was Franklin P. McCann, Peoria.

Those interested in professional examinations should contact Dr. Peterson, 2747 E. McDowell Rd., Phoenix.

Basic science examinations December 15 at University of Arizona, Tucson. Applications must be filed 2 weeks prior to examinations. Address Mr. Herman E. Bateman, secretary, Basic Science Board, University of Arizona, Tucson.

Arkansas basic science examinations October 15-16. Address Mr. A. W. Ford, secretary, Healing Arts Board, Commissioner, Department of Education, Little Rock.

Colorado professional examinations

December 8-9 at Y.W.C.A. Bldg., Denver. Address Mrs. Beulah H. Hudgens, executive secretary, Board of Medical Examiners, 17 Republic Bldg., Denver 2.

Basic science examinations December 2-3 at second floor lecture room, Y.M.C.A. Building, E. 16th Ave., and Lincoln St., Denver. Applications must be filed by November 18. Address Esther B. Starks, D.O., secretary, Basic Science Board, 1459 Ogden St., Denver 18.

Connecticut Osteopathic Examining Board has reappointed James T. Berry, Hartford, to its membership.

Delaware examinations January 12-14. Address Joseph S. McDaniel, M.D., secretary, Board of Medical Examiners, Professional Bldg., Dover.

District of Columbia Board of Examiners in Medicine and Osteopathy has reappointed Chester D. Swope, D.O., Washington, D.C., to its membership.

Professional examinations November 9-10. Address Mr. Paul Foley, Deputy Director, Department of Occupations and Professions, 1740 Massachusetts Ave., N.W., Washington 6, D.C.

Basic science examinations in October. Address Mr. Foley.

Florida examinations December 5-6. Address Thomas F. Sheffer, D.O., secretary, Board of Osteopathic Medical Examiners, Las Olas Hospital, 1516 E. Las Olas Blvd., Fort Lauderdale.

Georgia Board of Osteopathic Examiners has listed its new officers as Hoyt B. Trimble, Atlanta, president, and Thomas W. Burroughs, Valdosta, vice president. Walter L. Jones, Rome, was reappointed to the Board.

Idaho examinations November 12 at Boise. Address Mrs. Nan K. Wood, director, Occupational License Bureau, Department of Law Enforcement, State House, Boise.

Illinois examinations in October at Chicago. Address Mr. Frederic B. Selcke, Superintendent of Registration, Department of Registration and Education, State House, Springfield.

Iowa basic science examinations January 12 at the Capitol Building, Des Moines. Address Elmer W. Hertel, Ph.D., secretary, Board of Basic Science Examiners, Wartburg College, Waverly.

Kansas examinations in January. Address Francis J. Nash, M.D., secretary, Board of Healing Arts, New Brotherhood Bldg., Kansas City.

Basic science examinations November 6-7 in Science Hall, Kansas State College, Pittsburg. Applications must be filed 30 days prior to examinations. Address Dr. L. C. Heckert, secretary, Board of Basic Science Examiners, Pittsburg State Teachers College, Pittsburg.

Maine Board of Osteopathic Examination and Registration has reported new officers. Hiram D. Stevens, Smyrna Mills, is chairman, and George F. Noel, Dover-Foxcroft, is secretary-treasurer.

Examinations November 10-11 at Augusta. Address Dr. Noel, 20 Monument Sq., Dover-Foxcroft.

Maryland examinations in October at Baltimore. Address Christopher L. Ginn, D.O., secretary, Board of Osteopathic Examiners, 19 W. Mulberry St., Baltimore 1.

Massachusetts examinations January 12. Address David W. Wallwork, M.D., secretary, Board of Registration in Medicine, Room 37, State House, Boston.

Michigan Board of Osteopathic Registration and Examination has reappointed Roy G. Bubeck, Jr., Grand Rapids, to its membership.

Basic science examinations in October. Address Mrs. Anne Baker, secretary, Board of Examiners in the Basic Sciences, 116 Mason Bldg., Lansing.

Minnesota Board of Osteopathic Examiners has announced its new officers. Robert H. Clark, Northfield, is president; E. C. Goblirsch, Littles Falls, is vice president; and Wallace F. Kreighbaum, Minneapolis, is secretary-treasurer. Drs. Kreighbaum and Goblirsch were recently reappointed to the Board.

Dale Dodson, D.O., Northfield, has been reappointed to the Board of Examiners in the Basic Sciences. Dr. Dodson also was elected vice president.

Basic science examinations January 5 at University of Minnesota, Minneapolis. Address Raymond N. Bieter, M.D., secretary, Board of Examiners in the Basic

"R Day"

for the neuritis patient can be tomorrow

"R Day"—*when pain is relieved*—can come early for patients with inflammatory (non-traumatic) neuritis if treatment with Protamide is started promptly after onset.

Protamide is the therapy of choice for either early or delayed treatment, but early use assures greatest efficacy.

For example, in a 4-year study[1] and a 26-month study[2] a combined total of 374 neuritis patients treated with Protamide during the first week of symptoms responded as follows:

60% required only 1 or 2 daily injections for complete relief

96% experienced excellent or good results with 5 or less injections

Thus, the neuritis patient's first visit—especially an early one—affords the opportunity to speed his personal "R Day."

Protamide is available at pharmacies and supply houses in boxes of ten 1.3 cc. ampuls. Intramuscularly only, one ampul daily.

PROTAMIDE®

REFER TO PDR PAGE 794

Sherman Laboratories

Detroit 11, Michigan

1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952

the addition of the decongestant makes for better cough control

by decongesting the cough area

while controlling the cough reflex

TRIAMINICOL provides more complete cough control than regular "cough syrups" because it contains Triaminic,[1,2,3] the leading oral nasal decongestant. This decongests the mucous membranes of the respiratory tract, reducing swelling and sensitivity, and controlling irritating postnasal drip, a common cough stimulus.

TRIAMINICOL also acts directly on the cough reflex center. It provides the nonnarcotic antitussive, Dormethan, fully as effective as codeine but without the drawbacks of codeine.[4] Liquefaction and expulsion of exudates is aided by the classic expectorant action of ammonium chloride.

Each 5 ml. tsp. of TRIAMINICOL provides:

Triaminic® ..... 25 mg.
(phenylpropanolamine HCl ..... 12.5 mg.
pheniramine maleate ..... 6.25 mg.
pyrilamine maleate ..... 6.25 mg.)
Dormethan (brand of dextromethorphan HBr) ..... 15 mg.
Ammonium chloride ..... 90 mg.

In a pleasant-tasting, fruit-flavored, non-alcoholic syrup.

Dosage: Adults – 2 tsp. 3 or 4 times a day; children 6 to 12 – 1 tsp. 3 or 4 times a day; children under 6 – dosage in proportion.

References: 1. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958. 4. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 547.

Triaminicol®
syrup

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

Sciences, 105 Millard Hall, University of Minnesota, Minneapolis 14.

Missouri has formed a new composite Board of Registration for the Healing Arts. D.O.'s named to the Board include Richard A. Michael, Jefferson City, and R. W. Matheny, Chillicothe.

Montana Board of Osteopathic Examiners has named Warren E. Monger, Dillon, to its membership.

Nebraska basic science examinations January 12-13. Address Mr. R. K. Kirkman, Director, Bureau of Examining Boards, Department of Health, State Capitol Bldg., Lincoln 9.

Nevada professional examinations in January. Address John H. Pasek, D.O., secretary, Board of Osteopathic Examiners, 205-10 First National Bank Bldg., Minden.

Basic science examinations January 5. Address Donald G. Cooney, Ph.D., secretary, Board of Examiners in the Basic Sciences, Box 9005, University Station, Reno.

New Jersey examinations October 20-23. Address Royal A. Schaaf, M.D., secretary, Board of Medical Examiners, Room 1407, 28 W. State St., Trenton 8.

New Mexico Board of Osteopathic Examination and Registration has announced its new officers. They are Paul S. Jones, Las Cruces, president; Joseph M. Peterson, Albuquerque, vice president, and L. D. Barbour, Roswell, secretary-treasurer.

Professional examinations January 15. Address Dr. Barbour, Roswell Osteopathic Hospital, Roswell.

Basic science examinations October 18. Address Mrs. Marguerite Cantrell, secretary, Board of Examiners in the Basic Sciences, Box 1522, Santa Fe.

North Carolina Board of Osteopathic Examination and Registration has reported its new officers as Richard C. Baker, Rockingham, president, and Joseph H. Huff, Burlington, secretary-treasurer. Guy T. Funk, Winston-Salem, was reappointed to the Board.

North Dakota Board of Osteopathic Examiners has announced its new officers: Harry L. Homewood, Valley City, president; Erwin O. Smith, Wahpeton, vice president; and M. J. Hydeman, Bismarck, secretary-treasurer. Dr. Smith was recently reappointed to the Board.

Examinations January 9. Address Dr. Hydeman, 417½ Broadway, Bismarck.

Ohio examinations December 15-17 at Columbus. Applications must be filed by December 3. Address H. M. Platter, M.D., secretary, Medical Board, 21 W. Broad St., Columbus 15.

Oklahoma Board of Osteopathy has reported its new officers. They include Ray H. Thompson, Vinita, president; Fred H. Erhardt, vice president; and G. R. Thomas, secretary-treasurer. The latter two are of Oklahoma City.

Oregon examinations in January. Address Mr. Howard I. Bobbitt, executive secretary, Board of Medical Examiners, 609 Failing Bldg., Portland 4.

Rhode Island professional examinations January 7-8 at Providence. Address Mr. Thomas B. Casey, Administrator of Professional Regulation, 366 State Office Bldg., Providence.

Basic science examinations November 11 at Room 366, State Office Bldg., Providence. Applications must be filed 2 weeks prior to examinations. Address Mr. Casey.

South Carolina Board of Osteopathic Examiners has reelected Nancy A. Hoselton, Columbia, president, and Ernest A. Johnson, Summerville, secretary-treasurer.

Examinations November 17 at Columbia. Address Dr. Johnson, Box 525, Summerville.

South Dakota basic science examinations December 4-5 at Medicine and Science Bldg., University of South Dakota, Vermillion. Applications must be filed by November 24. Address Gregg M. Evans, Ph.D., secretary, Basic Science Board, 310 E. 15th St., Yankton.

Tennessee Board of Examination and Registration for Osteopathic Physicians has elected L. Dale Chesemore, Paris, president, and Marion Edmund Coy, Jackson, secretary. Dr. Coy was recently reappointed to the Board.

Professional examinations in February and August at Nashville. Address M. E. Coy, D.O., secretary, Board of Examination and Registration for Osteopathic Physicians, 1226 Highland, Jackson.

Basic science examinations given every 3 months. Address O. W. Hyman, M.D., secretary, Board of Basic Science Examiners, 874 Union Ave., Memphis 3.

Texas examinations December 3-5 at the Hilton Hotel, Fort Worth. Applications must be filed 10 days prior to examinations. Applications for reciprocity must be on file 30 days ahead. Address M. H. Crabb, M.D., secretary, Board of Medical Examiners, 1714 Medical Arts Bldg., Fort Worth 2.

Utah has appointed Earle F. Waters, D.O., Salt Lake City, as a member of the newly established Basic Science Examining Committee.

Vermont Board of Osteopathic Examination and Registration has elected Howard I. Slocum, Middlebury, president; Charles D. Beale, Rutland, secretary; and Roy M. Sherburne, St. Johnsbury, treasurer. Dr. Beale was recently reappointed to the Board.

Examinations January 20-21. Applications must be filed by January 10. Address Dr. Beale, Mead Bldg., Rutland.

Washington professional examinations in January. Address Mr. Thomas A. Carter, secretary, Professional Division, Department of Licenses, Olympia.

Basic science examinations in January. Address Mr. Carter.

West Virginia Board of Osteopathy has reelected its slate of officers. They are Earl K. Lyons, Elkins, president; Roland P. Sharp, Mullens, vice president; and Donald C. Newell, Oak Hill, secretary-treasurer.

Wisconsin professional examinations January 12 at Madison. Address Thomas W. Tormey, Jr., M.D., secretary, Board of Medical Examiners, State Office Bldg., 1 W. Wilson St., Madison.

Basic science examinations December 5 at Marquette University School of Medicine Auditorium, Milwaukee. Applications must be filed by November 27. Address Mr. W. H. Barber, secretary, Board of Examiners in the Basic Sciences, Ripon College, Ripon.

Wyoming Board of Medical Examiners has elected a new secretary, James W. Sampson, M.D., Cheyenne.

British Columbia examinations in January. Address Lynn Gunn, M.D., registrar, Council of College of Physicians and Surgeons, 1807 W. 10th Ave., Vancouver 9.

Ontario Board of Directors of Osteopathy has announced its new officers. They are Douglas E. Firth, Toronto, president; J. Edwin Wilson, Barrie, vice president; and D. G. A. Campbell, Toronto, secretary-treasurer.

for

COUGHS

that DEFY *control*

a broader range of relief...

in the cough of postnasal drip and sinusitis, interfering with restful sleep night after night

in the defiant cough, where combined decongestant-antitussive action is required to break the cough-congestion cycle

in the dangerous cough, as in surgical patients, where muscular stress might cause damage and retard healing

In Tussaminic, the leading respiratory decongestant, Triaminic, is combined with nonnarcotic, antitussive Dormethan, and well-established terpin hydrate to suppress useless cough and ease productive cough.

more prolonged relief...

This special "timed release" design of the Tussaminic Tablet provides full daytime relief with the convenient dosage of 1 tablet every 6 to 8 hours, and night-long relief with 1 tablet at bedtime.

first — 3 or 4 hours of relief from the outer layer

then — 3 or 4 *more* hours from the core

Each Tussaminic Tablet provides:

Triaminic®.....100 mg.
(phenylpropanolamine HCl, 50 mg.; pheniramine maleate, 25 mg.; pyrilamine maleate, 25 mg.)
Dormethan (brand of dextromethorphan HBr).....30 mg.
Terpin hydrate.....300 mg.

Tussaminic®

timed-release *tablets*

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

Reregistration of osteopathic licences

October 31—Pennsylvania, $5. Address Mrs. Katherine W. Wollett, Bureau of Professional Licensing, 501 Education Bldg., Harrisburg.

November 1—Rhode Island, $1. Address Mr. Thomas B. Casey, Administrator of Professional Regulation, 366 State Office Bldg., Providence.

December 1—District of Columbia, $4. Address Mr. Paul Foley, Deputy Director, Department of Occupations and Professions, 1740 Massachusetts Ave., N.W., Washington 6.

December 1—Georgia, $3. If renewed after December 31, $10. Address Mr. C. I. Clifton, joint secretary, Examining Boards, 224 State Capitol, Atlanta.

December 1—Oregon, resident, $15; nonresident, $5. Address Mr. Howard I. Bobbitt, executive secretary, Board of Medical Examiners, 609 Failing Bldg., Portland 4.

December 31—Tennessee, $5. Address M. E. Coy, D.O., secretary, Board of Examination and Registration for Osteopathic Physicians, 1226 Highland, Jackson.

Prior to January 1—Arizona, not more than $10. Address Russell Peterson, D.O.,

KOAGAMIN®
parenteral hemostat

"For Want of Timely Care, Millions Have Died of Medicable Wounds."
John Armstrong, Art of Preserving Health, Bk. III.

timely care in curbing bleeding of any origin • millions of doses administered without any untoward effects • most economical hemostatic for routine use—costs less per injection, requires fewer injections

KOAGAMIN, an aqueous solution of oxalic and malonic acids for parenteral use, is supplied in 10-cc. diaphragm-stoppered vials.

CHATHAM PHARMACEUTICALS, INC.
NEWARK 2, NEW JERSEY

DISTRIBUTED IN CANADA
BY AUSTIN LABORATORIES, LIMITED,
GUELPH, ONTARIO

Chatham

1,000,000

secretary, Osteopathic Board of Registration and Examination in Medicine and Surgery, 2747 E. McDowell Rd., Phoenix 22.

January 1—California, $17 for residents and nonresidents. Address Glen D. Cayler, D.O., secretary, Board of Osteopathic Examiners, 1013 Forum Bldg., Sacramento 14.

January 1—Florida, $10. Address Thomas F. Sheffer, D.O., secretary, Board of Osteopathic Medical Examiners, Las Olas Hospital, 1516 E. Las Olas Blvd., Ft. Lauderdale.

January 1—Maine, $4. Address George F. Noel, D.O., secretary, Board of Osteopathic Examination and Registration, 20 Monument Square, Dover-Foxcroft.

January 1—Manitoba, $5. Address W. Kurth, D.O., secretary, Licensing Board of Osteopathic Physicians, 248 Moorgate Blvd., St. James, Winnipeg 12.

January 1—New York, $6, biennially. A physician receiving a license the second year of any biennial registration period pays a fee of $3 for a certificate expiring December 31 of such second year. Address Dr. John W. Paige, Chief, Bureau of Professional Examinations and Registrations, 23 S. Pearl St., Albany 7.

January 1—Ontario, $35. Address D. Gordon Campbell, D.O., secretary, Board of Directors of Osteopathy, 8 Bloor St., E., Toronto 5.

January 1—Saskatchewan, $30. Address Anna E. Northup-Little, D.O., 2228 Albert St., Regina.

January 1—Texas, $5. Address M. H. Crabb, M.D., secretary, Board of Medical Examiners, 1714 Medical Arts Bldg., Fort Worth 2.

January 1—Utah, $3. Address Wilford G. Hale, D.O., secretary, Osteopathic Examining Board, 506 W. Second St., Logan.

January—Alberta. No reregistration. Pay $10 a year membership in the College of Physicians and Surgeons, Alberta. Address G. B. Taylor, acting registrar, Office of the Registrar, University of Alberta, Edmonton.

During January—Connecticut, $5. Address Frank Poglitsch, D.O., secretary, Osteopathic Examining Board, 300 Main St., New Britain.

During January—Minnesota, $2. Address Wallace F. Kreighbaum, D.O., secretary, Board of Osteopathic Examiners, 2748 Hennepin Ave., Minneapolis 8.

During January—North Carolina, $5. Address Joseph H. Huff, secretary, Board of Osteopathic Examination and Registration, 614 Fountain Pl., Box 1177, Burlington.

During January—Wisconsin, $3. Address Thomas W. Tormey, Jr., M.D., secretary, Board of Medical Examiners, State Office Bldg,, 1 W. Wilson St., Madison.

Examination by National Board

The National Board of Examiners for Osteopathic Physicians and Surgeons conducts Parts I and II of its examinations on the first Thursday and Friday of each May and December at the six approved colleges. Application blanks may be obtained from the secretary of the Board or the dean of the college, and the completed application blank, together with check for the part to be taken, must be in the secretary's office by the November 1 or April 1 preceding the examination.

Examinations in Part I consist of anatomy, including histology and embryology; physiology; physiological chemistry; general pathology; and bacteriology, including parasitology and immunology.

Part II consists of examinations in surgery, including applied anatomy, surgical pathology, and surgical specialties; neurology and psychiatry; public health, including hygiene; medical jurisprudence; obstetrics and gynecology; pediatrics; osteopathic principles, therapeutics, including pharmacology and materia medica.

Part III is an oral and practical examination given under the supervision of a chief examiner who is a member of the Board and by a panel of associate examiners. Subjects covered in Part III are: anatomy; physiology; pathology; osteopathic principles, therapeutics and pharmacology; surgery; ophthalmology and otorhinolaryngology; obstetrics and gynecology; physical and clinical diagnosis; public health and communicable diseases.

These are oral examinations which the candidate may take after having satisfactorily completed the first six months of a 1 year internship in a hospital approved by the American Osteopathic Association for intern training. Part III is given annually.

Eligibility requirements are as follows: Part I, satisfactory completion of the first 2 years in an approved school of osteopathy; Part II, satisfactory completion of Part I and of the first two quarters or trimesters of the senior year in an approved osteopathic college; Part III, satisfactory completion of Part II and at least 6 months of a 1-year internship approved by the American Osteopathic Association.

Applications must be filed with the secretary of the Board not less than 30 days prior to the examination dates. Address Paul van B. Allen, D.O., secretary, 4425 N. Meridian St., Indianapolis 8.

ANEMIA? Your examination strongly suggests patient anemia. Here's how you can have on-the-spot, laboratory-accurate hemoglobin determinations to confirm your clinical diagnosis... and check the effectiveness of progressive treatments.

AO Hb METER! You or your nurse can make hemoglobin determinations in less time than it takes to make an oral temperature reading. Pocket size...use it at hospital, office or bedside. Used by doctors over four million times last year. Ask your Surgical Supply dealer for a demonstration or write:

American Optical Company
SPENCER
INSTRUMENT DIVISION, BUFFALO 15, NEW YORK

Dept. V175
Please send me complete information on the AO Hb Meter.
Name_____
Address_____
City_____ Zone____ State____

A public health agency's role in adoption*

Geoffrey M. Martin, M.D.
Executive Secretary,
Kansas State Board of Health

Adoption, in the United States, in 1958, is an extraordinarily complicated field. Is it one in which public health workers have a part to play? My own views of the answer are colored by the experience of the Kansas State Board of Health with foster care to children. This experience has been neither extensive nor profound, and most of it has been peripheral to adoption, but it has had some unique features.

The State board of health in Kansas licenses all types of foster care facilities for children and all private child placing agencies under a law passed through the efforts of the maternal and child health division in 1919. This was originally a solo performance, but in 1951 the law was amended to require specific studies and approvals by the child welfare division of the State department of social welfare before any license was issued. The amendment established a community of interest and a working relationship between the two agencies that is rare in this country. The program involves at present nearly a thousand applications for license yearly, of which something over a hundred are for homes in which children have been placed for adoption by a private agency but have not yet been legally adopted.

We have had, therefore, for many years a window through which to observe adoption practice, and a certain amount of authority and responsibility for improving what we have seen. What we have seen may be typical for the Great Plains States only, but as nearly as we can make out it is not grossly atypical of adoption throughout the coun-country; the children, the parents, the agencies, and the problems are much the same everywhere. The only entirely atypical thing is for a health department to have an observation post because it is generally taken for granted that public health has no concern with adoption at all. This assumption would be considered valid by most professional people, since most of the physicians, nurses, and administrators in public health work have nothing whatsoever to do with adoption from the beginning of a fiscal year to its close.

There are, however, a number of opportunities for public health workers to engage cooperatively with others in this field, if one looks for them. Public health agencies register illegitimate births and write new birth certificates when children are adopted and perhaps there is useful information to be gleaned from all these records. Public health agencies are expert in arranging good medical supervision during pregnancy for the indigent or uneducated mother, and social

*Reprinted from *Children*, July-August 1959. Based on a paper presented at the 1958 meeting of the American Public Health Association.

WHICH OCCURS FIRST IN ARTHRITIC AND RHEUMATIC DISORDERS— THE PAIN OR THE SPASM?

Regardless of which occurs first, the pain or the spasm, prescribe SALIMEPH FORTE or SALIMEPH/PREDNISOLONE to rapidly relieve the pain which causes the spasm and to relax the spasm which causes the pain in arthritic and rheumatic disorders.

SALIMEPH® FORTE

ACTH-like action without ACTH side effects

A specific analgesic, salicylamide 500 mg., best tolerated salicylate, plus mephenesin 333 mg., safest potent skeletal-muscle relaxant, and ascorbic acid 50 mg. in special coated, easy to swallow, capsule-shaped tablets. Provides massive salicylate therapy with only 2 or more tablets q.i.d.

SALIMEPH®/PREDNISOLONE

effective corticosteroid anti-inflammatory agent

Combines all of the advantages of Salimeph Forte but adds only the small dosage needed in massive salicylate therapy of 0.75 mg. of prednisolone, approximately 4 times as effective (mg. for mg.) as hydrocortisone with virtually none of its untoward side effects.

Also available: **Salimeph-C,** when lesser dosage is adequate; **Salimeph-C/Codeine Phosphate,** when pain is severe; **Salimeph C/Colchicine,** for gout and gouty arthritis. All Salimeph products are supplied in bottles of 100, 500 and 1000 tablets.

Prescribe with Confidence

KREMERS-URBAN COMPANY Milwaukee 1, Wisconsin

Distinctive ℞ Specialties Since 1894

agencies have difficulties in providing such care for the unmarried mothers with whom they work. The increasing public health interest in perinatal mortality and morbidity could have some bearing on the quality of the children placed in adoptive homes.

Public health workers are, or should be, relatively skillful in statistical analysis and evaluation, something in which child welfare work is not yet strong. They often engage in a multidisciplinary approach to social problems and have enough self-confidence to engage in it freely, which might make them useful in adoption practice where social work, the law, medicine, and psychology should work together smoothly. The public health field has been well acquainted with the uses of publicity for a long period of time, while social work only recently has become convinced of its importance, especially in the matter of adoptions.

In public administration, health agencies are older and perhaps more experienced than their counterparts in the field of social work. The public health agency is a little cynical about human nature. Skimmed milk will persistently masquerade as cream, and have a high bacterial content, unless standards are established and enforced and frequent inspections are made. This sort of attitude could be useful in adoption work, where the important element of protection to children strictly requires good laws and good law enforcement.

The benefits of an interest in adoption on the part of public health workers would not all flow in one direction. The public health field can learn a great deal about children and the conditions of childhood from child welfare practice, a knowledge which can be used to the advantage of any maternal and child health program. Involvement with adoption practice specifically can lead to a better understanding of certain significant public health problems, such as abortions (both natural and criminal); the incidence and etiology of infertility; morbidity and mortality among illegitimate children; natural mother-child relationships and the development of motherliness; the consequences of maternal deprivation; and the early identification and alleviation of handicapping conditions in children.

THE PICTURE TODAY

Let us take a brief look at the adoption picture before looking further at ways in which public health agencies might become involved. Professionally speaking, placement of a child for adoption is the intimate and special sphere of the child welfare worker. It lies at one end of a whole spectrum of services to children deprived of parental care and is the logical objective for the child who has no family because his parents are dead, or have deserted him, or have relinquished him because they cannot provide proper care, or because parental rights have been severed by court order.

The social worker's job is to find the right permanent home for a particular child, a home where in all probability he will find love and security and support until he is an adult. The rules for accomplishing this are largely empiric. Until recently there have been, to my knowledge, no properly controlled studies of adoptive placement which would identify the important variables and afford some firm basis for determining practice. Child placement is in fact an art, although considerable research to give it a scientific foundation is underway.

In the case of independently arranged adoptions, almost anybody may substitute for the social worker and her agency setting. Many people feel confident that they can arrange good adoptive placements,[1] and this natural confidence is apparently enhanced by postgraduate training in law, medicine, and theology. The independent placers are usually ignorant of the empiric rules, and rarely make enough placements to be able to work out rules of their own. They think in terms of finding a good child for a particular family rather than a good family for a particular child.

Placement of the child in a family home is a prelude to the very important legal procedure of adoption. The law varies from State to State, but it usually requires that a petition to adopt be filed in probate court by the prospective parents, and that it be accompanied by a consent to the adoption signed by someone who has a right to give consent—either the natural parents or the appropriate social agency. In most States an investigation must be made by a social

three essential steps help overweight patients eat to live, not live to eat

supervision by the physician

a balanced eating plan

supportive medication

Obedrin®

and the 60-10-70 Basic Plan

provide an effective weight control regimen

Frequently a patient loses weight while on a special diet, then soon gains it back again. Obedrin is a valuable aid to this type of patient. It curbs unhealthy food craving while the patient establishes correct eating habits. Thus he becomes able to *maintain* optimum weight.

Each capsule or tablet provides:

Semoxydrine® HCl (methamphetamine HCl), 5 mg., for its anorexigenic and mood-lifting effects

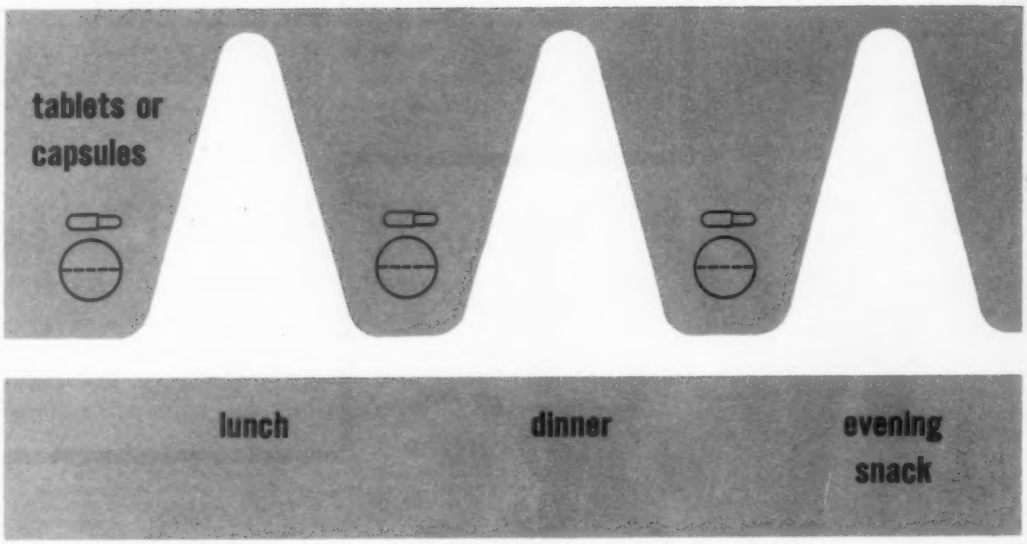
Pentobarbital, 20 mg., to guard against excitation

Thiamine Mononitrate, 0.5 mg., Riboflavin, 1 mg. and Nicotinic Acid (Niacin), 5 mg., to supplement the diet

Ascorbic Acid, 100 mg., to help mobilize tissue fluids

Bristol, Tennessee • New York • Kansas City • San Francisco THE S. E. MASSENGILL COMPANY

for dependable control of appetite . . . a flexible dosage form



The Obedrin formula permits a flexible dosage schedule which depresses the appetite when it is most important to do so—at peak hunger periods. The physician can adjust the dosage to fit each patient's need.

Obedrin®

and the 60-10-70 Basic Plan

advantages of Obedrin

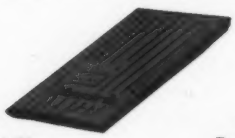
A dependable anorexigenic agent

A flexible dosage form

Minimal central nervous stimulation

Vitamins to supplement the diet

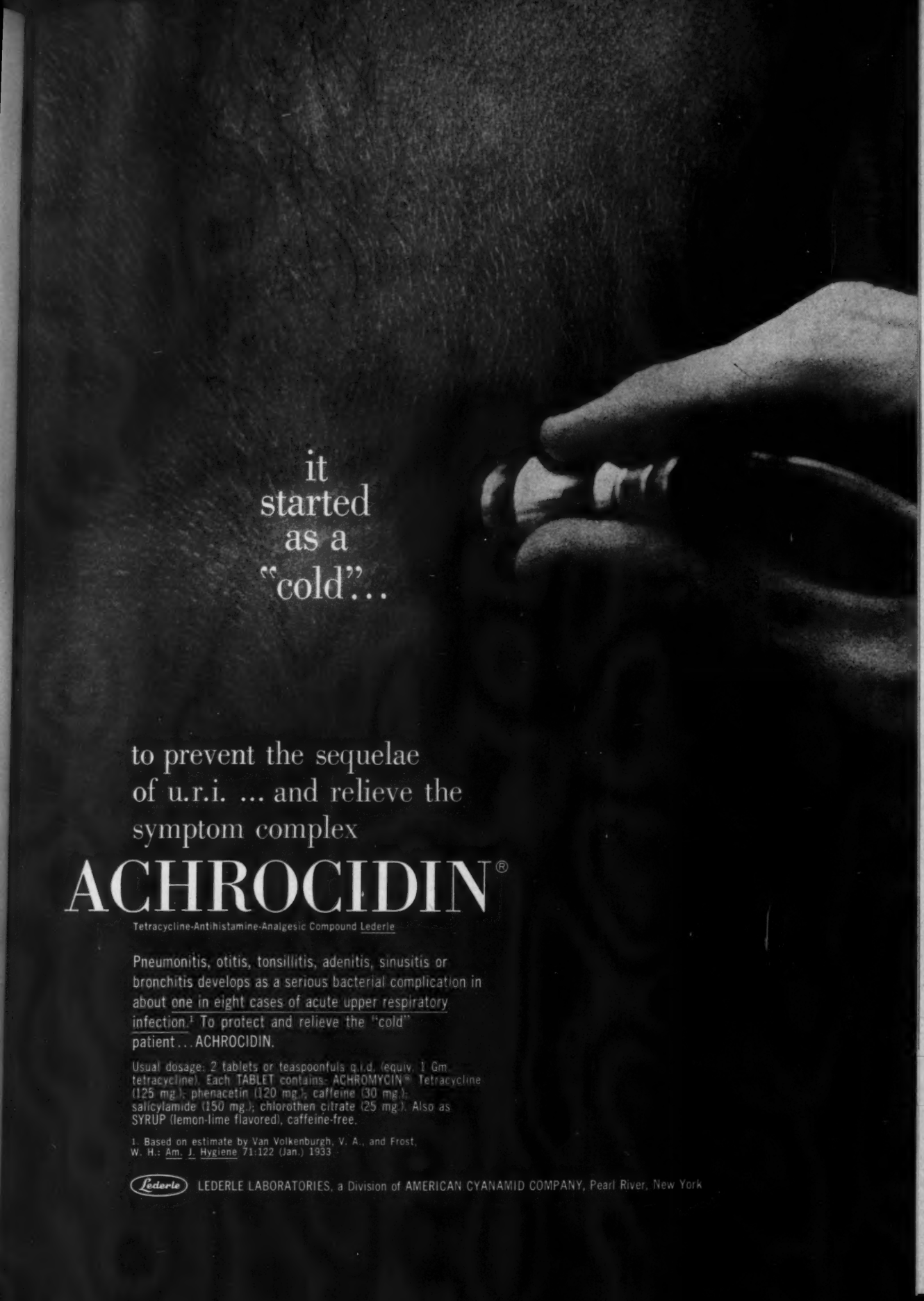
No hazards of impaction



Write for 60-10-70 menus, weight charts, and samples of Obedrin.

Used with the 60-10-70 Basic Plan, Obedrin offers an ideal weight-control regimen for the overweight patient.

Bristol, Tennessee • New York • Kansas City • San Francisco THE S. E. MASSENGILL COMPANY



to prevent the sequelae
of u.r.i. ... and relieve the
symptom complex

ACHROCIDIN®

Tetracycline-Antihistamine-Analgesic Compound Lederle

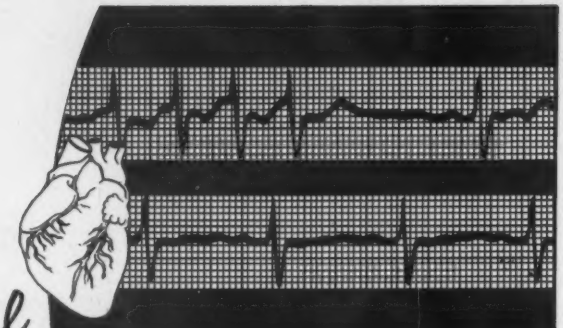
Pneumonitis, otitis, tonsillitis, adenitis, sinusitis or bronchitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.[1] To protect and relieve the "cold" patient... ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

now...



quinidine b.i.d.

(one dose every 12 hours)

QUINAGLUTE®
DURA-TAB S.M.

the only oral Sustained Medication*
quinidine gluconate, 5 gr.

for control of

cardiac arrhythmias

- each dose of Quinaglute Dura-Tab S.M.* maintains uniform plasma levels up to 12 hours.[1]
- no night dosage needed.
- better absorbed and tolerated than quinidine sulfate.
- an unexcelled quinidine in premature contractions, auricular tachycardia, flutter, fibrillation.

REFER TO PDR
PAGE 867

Dosage: For conversion of auricular fibrillation to normal sinus rhythm, in most cases, 2 Quinaglute Dura-Tab S.M. tablets 3 to 4 times a day, for 2 to 3 days.

For maintenance 1 to 2 tablets every 10 to 12 hours.

Supplied: Bottles of 30, 100 and 250.

samples, reprint and detailed literature.

WYNN PHARMACAL
CORPORATION
5119 West Stiles Street
Philadelphia 31, Pa.

1. Bellet, S., Finkelstein, D., and Gilmore, H.: A.M.A. Archives Internal Med. 100:750, 1957.

also available:
INJECTABLE QUINAGLUTE 10 cc, Multiple Dose Vials, 0.08 Gm. Quinidine Gluconate per cc.
*U. S. Patent 2895881

agency if the child is not related to the petitioners. However, even if investigation shows that the placement is by no means a satisfactory one, as is often the case in independent arrangements, the petition is usually granted anyhow. The courts are unwilling or unable to take the responsibility of removing a child from a home in which he has lived for some period of time.

THE CHILDREN

The adoption picture is further complicated by the fact that there are about five distinctly different categories of children needing adoption, each with its individual problems and each overlapping the other to some extent.

Category A is composed of healthy, well formed, white babies who are usually illegitimate. The demand for such babies greatly exceeds the supply. The social agency has no trouble in finding homes for such children, but great difficulty in pacifying the would-be parents for whom no child is available. A large percentage of the children in this category are placed by individuals and not by agencies.

Category B, at the other extreme, consists of children for whom it is just plain hard to find adoptive homes. These are children with significant mental or physical handicaps, children with major personality disturbances, and children from minority racial groups or mixed racial backgrounds. As short a time as 10 years ago most of such "hard to place" children probably would not have been considered for placement at all. In the last decade social agencies have learned that good homes can be found for them if the responsible agency will exert enough honest effort. Since the effort is always expensive and the price of failure is responsibility for expensive, long-term foster care, there is a tendency to consign these children to placement agencies that are tax-supported.

Category C children are those midway between A and B, without pronounced handicaps but not so young or so white or so attractive as the A babies. These require for a good placement enough work and skill to make the task professionally rewarding. A few of the younger ones are placed independently, but as a general rule these are agency children.

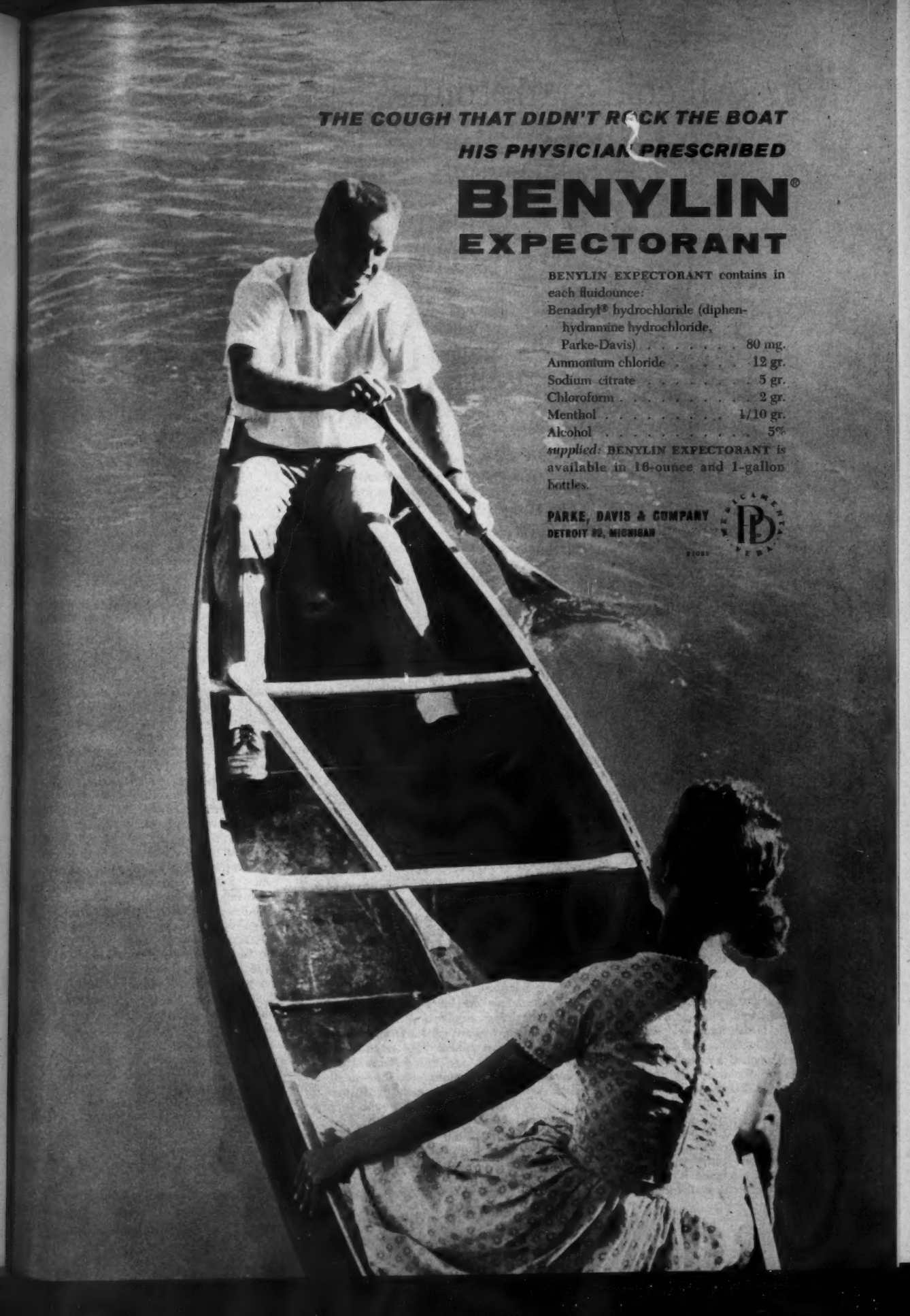
Category D consists of foreign-born children, the majority from European countries. For the most part, they are young and white and healthy, though this is certainly not the case with the children of mixed Negro and Korean racial backgrounds that have been arriving in this country recently. National and international social agencies have made increasingly successful efforts to exercise supervision of intercountry adoptions, but nevertheless many of the usual protections for the child are lacking. Some of these children are adopted abroad by proxy and may suddenly appear in this country without the knowledge of any responsible social agency.

Category E, consisting of stepchildren and children adopted by relatives other than parents, is the largest, the least dramatic, and certainly the most neglected from the standpoint of social control. Nearly half the children adopted in any given year fall into this group. The word "stepchild" has a bitter meaning in the English language, and our society has taken no real action to change its semantic implications. These children receive little supervision in some States and none at all in others. They are sometimes considered the responsibility of the courts that take divorce petitions—which are courts that are seldom provided with social workers.

Is it proper to call any of these children socially disadvantaged? There is not, I think, any yes or no answer to this question. From one aspect, it might always be considered better to be adopted than to be without a family; from another, a bad placement is complete disaster for the child. The question of disadvantage is plainly bound up with the alternatives that are available.

A parentless child is disadvantaged if a good adoptive home could be found for him but is not.

An adopted child is usually disadvantaged by a placement arranged independently if the available services of a


THE COUGH THAT DIDN'T ROCK THE BOAT
HIS PHYSICIAN PRESCRIBED
BENYLIN®
EXPECTORANT
BENYLIN EXPECTORANT contains in each fluidounce:
Benadryl® hydrochloride (diphenhydramine hydrochloride, Parke-Davis) . . . . . 80 mg.
Ammonium chloride . . . . . 12 gr.
Sodium citrate . . . . . 5 gr.
Chloroform . . . . . 2 gr.
Menthol . . . . . 1/10 gr.
Alcohol 5%
supplied: BENYLIN EXPECTORANT is available in 16-ounce and 1-gallon bottles.
PARKE, DAVIS & COMPANY
DETROIT 32, MICHIGAN
PD
MEDICAMENTA VERA

Now —All cold symptoms can be controlled

Tussagesic

timed-release *tablets*

Controls congestion
with Triaminic,[1,2,3] the leading oral nasal decongestant.

Controls aches and fever
with well-tolerated APAP, non-addictive analgetic[4] and excellent antipyretic.[5]

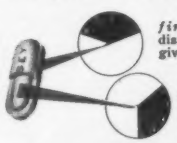
Controls cough centrally
with non-narcotic Dormethan, possessing "amply demonstrated" antitussive activity,[6] as effective as codeine.

Liquefies tenacious mucus
with terpin hydrate, classic expectorant.

Each TUSSAGESIC Tablet provides:

TRIAMINIC® ..... 50 mg.
(phenylpropanolamine HCl ..... 25 mg.
pheniramine maleate ..... 12.5 mg.
pyrilamine maleate ..... 12.5 mg.)
Dormethan
(brand of dextromethorphan HBr) ..... 30 mg.
Terpin hydrate ..... 180 mg.
APAP (N-acetyl-p-aminophenol) ..... 325 mg.

Prompt and prolonged relief because of this special "timed release" design:



first — the outer layer dissolves within minutes to give 3 to 4 hours of relief

then — the inner core releases its ingredients to sustain relief for 3 to 4 more hours

Dosage: One tablet in the morning, midafternoon and at bedtime. Pediatric dosage chart for Tussagesic Suspension available on request.

References: 1. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

TUSSAGESIC SUSPENSION provides palatability and convenience which make it especially attractive to children and other patients who prefer liquid medication.

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

qualified agency have been intentionally bypassed or overlooked.

A child placed in adoption by an agency is disadvantaged if the agency's practices are poor or outdated.

If public health agencies can favorably affect any of these disadvantaged children, and particularly if they can help them in ways that other agencies cannot, then public health has a real responsibility. In actual fact, many of these children are being touched by the public health programs for all children, but much more could be done if there was some focusing of the effort.

A PUBLIC HEALTH PROGRAM

A public health "adoption program" might consist of three main elements: (1) activities designed to make more parentless children available for adoption; (2) activities designed to reduce the frequency of independent placements; and (3) activities designed to improve agency adoptions.

1. Making children available. There are many ways public health agencies might make more children available for adoption. They can help to report illegitimate births promptly and routinely to appropriate welfare authorities, so that no illegitimate child will be overlooked. Routine visiting by the public health nurse might be required for illegitimate babies who leave the hospital with their mothers, a procedure that would keep some infants alive to be adopted at a later day, and at the least would insure that the child does not disappear from sight altogether. Public health nurses and physicians see a good many young children suffering from gross physical neglect as one aspect of gross parental neglect, or bearing visible marks of mistreatment. Such cases should be reported to the authorities. A child's own family is hard to replace, but some parents are hopeless and their children may be better off if placed for adoption.

Residential institutions, especially in the Southwest, contain many young children who are adoptable, but growing less so with each passing month. Public health agencies may not have direct authority over such facilities, but they can exert powerful moral suasion. In Kansas we have had some success in shaking these children out of the institutions, chiefly by pressing for qualified child welfare services as a necessary part of their organizational structure. When a public health agency informs an institution of its need for social work services, it may be more convincing than when the public welfare agency gives the same advice.

Many children with major physical handicaps could be adopted were it not for the high cost of long-term medical and hospital care. If tax-supported care is available to a child who remains a State ward, but is not available or not freely available if the child is adopted into a family, the public health agency has some obvious responsibilities for straightening things out. Similarly, public health knowledge and skills can be used in preparing handicapped children for adoption at the earliest age possible.

2. Reducing independent adoptions. In efforts to reduce the frequency of independent adoption, educating the public and the professionals is important. In Kansas the State board of health supplies physicians with pamphlets for use with their childless patients to stress the advantages of social agency adoptions. It participates in interprofessional meetings on adoption such as one held by the State medical society's committee on maternal welfare with the heads of the leading child placing agencies in the State. Following this meeting an editorial appeared in the medical society's journal deprecating the arrangement of adoptions by physicians.

It is helpful to have a straight story to tell. The impression is sometimes given that out of every three independent adoptions, one baby turns out to be defective and another is forcibly reclaimed by the natural mother. These are rare occurrences. Agency placements are always to be preferred (1) because they favor the interests of the child, who is helpless, over those of the would-be parents, and (2) because they bring professional knowledge and skill to bear on a crucial event in the child's life. They are not perfect, but they are safer.

Giving birth to an illegitimate baby under social agency auspices might be made less formidable. If, as actually happened in Kansas a few years ago, an unmarried mother is presented with a choice between, on the one hand, spending her pregnancy in a sunny apartment, receiving medical care by a specialist as a private physician, and having first-class private hospital care, and, on the other

hand, living in an unpleasant boarding house, receiving medical care in a chilly public clinic, and being delivered in a hospital for indigents, she can be excused for choosing the superior facilities even though these are offered by a lawyer operating independently rather than by a social agency. Moreover, a well cared for, well nourished, comfortable pregnancy is likely to result in a better baby. Because social agencies rarely have enough money properly to underwrite a pregnancy, public health skills can be of real help. In some States, notably Indiana and Connecticut, effective cooperative programs have been developed.[3]

Public health agencies usually have excellent relationships with the hospitals in which most illegitimate babies are born. Hospitals are made uneasy by independent adoptions initiated within their walls and usually welcome advice on how to proceed most ethically with their unmarried maternity patients. For these patients, receiving a written statement of what agency services are available may be more useful than just being handed a copy of "Infant Care" alone, with the compliments of the health department.

The enormous demand for nice babies, which is the basic cause of independent adoptions, could be reduced if more of the childless couples who want children could produce their own. In Kansas, we were able to give agencies assistance in establishing factual criteria for sterility by furnishing outlines for an examination and a list of qualified physicians, and occasionally giving direct consultation. Since nobody really knows how many couples are sterile, or whether sterility is increasing, the subject suggests itself as valuable for study by public health agencies. Better fertility studies will also reduce the incidence of pregnancy after adoption of a child, an event which is not catastrophic but which tends to make things more difficult for the adopted child.

3. Improving agency practices. In attempting to improve social agency practices, public health agencies must of course tread rather carefully. Perhaps the most effective approach would be to offer skill in designing and carrying out carefully controlled cooperative studies of adoptive placements. Such projects might well be underwritten through money available for mental health research, as badly placed children are likely to have a high incidence of identifiable psychological difficulties.

The sum of our knowledge of children is increasing rapidly, and health agencies may be aware of new concepts long before they filter down into social work. In Kansas the State health department was pressing for early placement of newborns into adoptive families and doubting the reliability of "infant testing" for predictive purposes for many years before these ideas became a part of accepted child welfare thinking. At present we are trying to convince our colleagues in child welfare that one foster mother in a temporary boarding home cannot care for the needs of more than two infants. We have every confidence that time will prove us right.

One of the real barriers to early placement of infants is the widespread supposition that many illegitimate babies who appear normal at birth will prove later to be more or less defective. Most pediatricians would probably favor an opposite theory, that even the ones who appear defective at birth are likely to be quite normal, but pediatricians do not generally have an extensive experience with illegitimate babies as a class. There may be a basis of fact in these misgivings, or there may not be, but no one will be sure until there are comprehensive studies comparing children born within wedlock with those born without. (One reason that we do not have such studies is the secrecy surrounding illegitimacy. In Kansas, one risks a jail sentence if he attempts to inspect birth certificates of illegitimate children.)

Birth certificates can help improve adoption practices by providing information needed to assess the child's hereditary potential. Unmarried parents may disappear from sight, leaving the information on the birth certificate as the only information available for determining the child's hereditary background and the circumstances of his birth. In Kansas the division of vital statistics has spent a good deal of effort obtaining completion of certificates that have been filed with the father's name listed as "unknown." We have only rarely found an unmarried mother actually so promiscuous as to preclude proper completion of the certificate.

running noses and open stuffed noses orally

Triaminic®

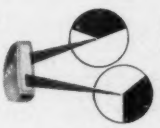
the leading oral nasal decongestant

- in nasal and paranasal congestion
- in sinusitis
- in postnasal drip
- in allergic reactions of the upper respiratory tract

safer and more effective than topical medication[1,2,3]

- systemic transport to all respiratory membranes
- provides longer-lasting relief
- presents no problem of rebound congestion
- avoids "nose drop addiction"

Relief with Triaminic is prompt and prolonged because of this special timed-release action . . . beneficial effect starts in minutes, lasts for hours



first — the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then — the core disintegrates to give 3 to 4 *more* hours of relief

Each TRIAMINIC Tablet provides:
Phenylpropanolamine HCl .....50 mg.
Pheniramine maleate .....25 mg.
Pyrilamine maleate .....25 mg.

One-half of this formula is in the outer layer, the other half is in the core.

Dosage: One tablet in the morning, mid-afternoon and at bedtime.

References: 1. Lhotka, F. M.: Illinois M. J. 112: 259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.

TRIAMINIC JUVELETS: Each timed-release Juvelet is equivalent in formula and dosage to one-half of a TRIAMINIC tablet, for the adult or child who requires only half strength dosage.

TRIAMINIC SYRUP is recommended for adults and children who prefer liquid medication. Each 5 ml. tsp. is equivalent to ¼ of a Triaminic Tablet. *Adults:* 2 tsp. 3-4 times a day; *children 6-12:* 1 tsp. 3-4 times a day; *children under 6:* in proportion.

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

now . . .
uncommon
relief
for the
common
cold
'EMPRAZIL'
TABLETS
provide total therapy
nasal decongestant · antihistaminic
analgesic · antipyretic
for symptomatic relief
aches · fever · pain · respiratory tract
congestion
Dosage: Adults and older children: One or two tablets t.i.d. as required. Children 6 to 12 years of age: One tablet t.i.d. as required.
Supplied: Bottles of 100 and 1000.
Each orange and yellow layered tablet contains:
'Sudafed'® brand Pseudoephedrine Hydrochloride. 20 mg.
'Perazil'® brand Chlorcyclizine Hydrochloride.... 15 mg.
Acetophenetidin .....150 mg.
Aspirin (Acetylsalicylic Acid) .....200 mg.
Caffeine ..... 30 mg.
Complete literature available upon request.
BURROUGHS WELLCOME & CO.
(U.S.A.) INC., Tuckahoe, N.Y.

Health departments routinely make certain services available to babies and parents who stand to profit by them. It seems fairly certain that adopted children are not apt to fare so well as those born into a family in the usual way. If visits by a public health nurse when a baby first comes home do promote good adjustments, if the "Pierre the Pelican" letters used by many States do help parents understand children, if well-child conferences do indeed bring about better mental and physical health, they should be made available to adopted children. As it stands, the adopted are frequently overlooked because the machinery of the health department gets confused in the absence of specific channels of communication between social agencies, courts, and local health departments. There is no good reason why such channels should not be established.

These possible activities, drawn from the experience of just one State, suggest that the public health field has its contributions to make to adoption practice, even though they are relatively small. With adoptions taking place at the rate of 90,000 a year and the trend ever upward, no health department could be criticized for devoting some special time and attention to this group of children in special need.

1. Thornhill, Margaret A.: Unprotected adoptions. *Children*, September-October 1955.
2. Curtis, Hester B.; deRongé, Alberta: Medical and social care for unmarried mothers. *Children*, September-October 1957.

High-level wellness for man and society*

Halbert L. Dunn, M.D., Ph.D., F.A.P.H.A.†

The awakened interest of public health circles in full-time local health departments and in the family and community programs of health maintenance is an indication that health workers are becoming more "health oriented." This shift in emphasis is in accord with the frequently quoted fundamental objective expressed in the Constitution of the World Health Organization, "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity."

To most of us, this concept of positive health is "seen through a glass darkly," because our eyes have been so long turned in a different direction, concentrating fixedly on disease and death. When we take time to turn our gaze in the opposite direction, focusing it intently on the condition termed good health, we see that wellness is not just a single amorphous condition, but rather that it is a complex state made up of overlapping levels of wellness. As we come to know how to recognize these levels objectively, more or less as we now diagnose one disease from another, we will realize that the state of being well is not a relatively flat, uninteresting area of "unsickness" but is rather a fascinating and ever-changing panorama of life itself, inviting exploration of its every dimension.

It is my thesis, therefore, that both medicine and public health must undertake a multiple and thoroughgoing exploration of the factors responsible for good health. Without prejudice to the importance or the continuation and support of existing medical and health programs involving preventive, curative, or rehabilitative research and activities, it seems clear that many of today's and tomorrow's problems call for the stimulation and development of a new major axis of interest directed toward positive health—one strong enough to activate physicians, health workers, and others in devoting a substantial segment of their time, resources, and creative energies toward understanding and culturing good health in a positive sense.

*Reprinted by permission from the *American Journal of Public Health*, June 1959. Copyrighted by *American Journal of Public Health*. This paper was presented before the Second General Session of the Ninth Annual Meeting of the Middle States Public Health Association in Milwaukee, Wis., April 29, 1958. This address was also presented in part before the Statistics Section of the American Public Health Association at the Eighty-Sixth Annual Meeting in St. Louis, Mo., October 30, 1958.

†Dr. Dunn is chief of the National Office of Vital Statistics, Public Health Service, of the U. S. Department of Health, Education, and Welfare, Washington 25, D. C.

NEW!

HYPTRAN™

FOR TENSION-FREE SLEEP ALL THROUGH THE NIGHT

DUAL RELEASE HYPNOTIC-TRANQUILIZER

WHEN ANXIETIES CAUSE INSOMNIA—WHEN INSOMNIA HEIGHTENS ANXIETIES—HYPTRAN TREATS BOTH CONDITIONS AND BREAKS THE PATTERN OF SLEEPLESSNESS.

Sleep comes quick, sure and sound, with new Hyptran. The outer layer contains an immediate calming dosage of phenyltoloxamine, the mild, certain non-phenothiazine tranquilizer to support short-acting secobarbital. This well-accepted fast-acting barbiturate acts directly on the higher cerebral levels and quickly brings needed sleep.

Hyptran's inner core of phenyltoloxamine, released later in the night, controls insomnia-causing anxieties, keeps them from "breaking through" and interrupting sleep. Patients awake calm and clear-headed, fully refreshed mentally and physically.

DOSAGE: 1-2 tablets before retiring. SUPPLIED: Bottles of 100 sugar-coated, pink tablets. **IMMEDIATE RELEASE:** Phenyltoloxamine Citrate 25 mg., Secobarbital 60 mg. (warning — may be habit forming); **DELAYED RELEASE:** Phenyltoloxamine Citrate 75 mg.

References: Batterman, R. C., et al.: New York J. Med. 58:3821, 1958. / Harrison, T. R.: Principles of Internal Medicine, 3rd ed. McGraw-Hill 1958, Pg. 1764. / DiMascio, A., et al.: Am. J. Psychiat., 115, 301-317, 1958. / Sainz, A.: Proc. of Mohawk Valley Psychiatric Assn., June 17, 1957. / Fleischmajer, R., et al.: Antib. Med. & Clin. Therap., 5, 120-124, 1958. / Hoekstra, J. B., et al.: J. Am. Pharm. A., 42, 587-593, 1953. / Cronk, G. H. and Naumann, D. E.: New York J. Med., 55, 1465-1467, 1955. Paper in preparation: data on 500 clinical cases available on request.

WAMPOLE LABORATORIES, STAMFORD, CONN.

quick, accurate early pregnancy diagnosis...

new, 3-day oral test for pregnancy

Pro-Duosterone®

anhydrohydroxyprogesterone 50.00 mg.
activated by ethinyl estradiol 0.03 mg. } per tablet

safe . . . physiologic . . . therapeutic

Pregnancy is now diagnosed safely, simply and accurately in its earliest weeks by oral administration of four PRO-DUOSTERONE® tablets daily for three consecutive days. In the nonpregnant patient uterine bleeding usually occurs 3 to 7 days after progesterone therapy.[1] No bleeding occurs when pregnancy exists, and gestation is protected.[2] Moreover, in short-term functional amenorrhea regular cycles are usually restored by oral progestogen.[1] Speed and precision of this test are unsurpassed, and "no laboratory equipment, animals, or specimens are needed."[1] The 3-day, oral PRO-DUOSTERONE test for pregnancy is also less costly than biologic methods. Diagnostic and therapeutic efficiency is assured by the small estrogen component of PRO-DUOSTERONE since "Progesterone has no action whatsoever in the absence of estrogens."[3]

Supplied: bottles of 24 tablets. **Roussel Corporation,** 155 E. 44th St., New York 17

1. Hayden, G.E.: Am. J. Obs. & Gynec. 76:271, 1958. 2. New & Nonofficial Drugs: J.A.M.A. 168:181, 1958. 3. Page, E.W.: GP 9:53, 1954.

WHY A NEW HEALTH AXIS IS NEEDED

The need for this new axis of interest is rooted in the changing demographic, social, economic, and political character of civilization. These changes are well known, although their significance is usually not fully appreciated. They might be summarized thus:

1. *It is a shrinking world.* Communication time has shrunk to the vanishing point. Knowledge of events can span the world in seconds and can be known to the masses in a matter of hours. Travel time from the farthermost reaches of the earth has diminished from years and months to a matter of days and hours.

2. *It is a crowded world.* Turned loose in an all-out assault upon disease and death, the medical and health sciences have brought about generally falling death rates without a corresponding reduction in birth rates. The consequent "epidemic" of population growth has reached towering proportions in many parts of the world and brings with it new health problems arising from population pressures and the scarcities of materials and living space.

3. *It is an older world,* in terms of its people, productivity, and resources. A consequence of the revolution brought about by the health sciences is that relatively more people live to an older age. The per capita demand for the output of the economic and productive machinery is steadily advancing. Consequently, it is probably a fallacy for us to assume, as so many of us have done, that an expansion in scientific knowledge can indefinitely counterbalance the rapidly dwindling natural resources of the globe.

4. *It is a world of mounting tensions.* The tempo of modern life and its demands on the human being and his society are steadily increasing with no corresponding readjustment and strengthening of the inner man and the fabric of his social organizations.

Due to these four factors among others, the problems which face the medical and public health professions have changed character drastically in the last few decades. Chronic illness and mental disease are far more prevalent. A great range of neurotic and functional illnesses, which seldom destroy life but which interfere with living a productive and full life, are on the increase.

The preventive path of the future, both for medicine and public health, inevitably lies largely in reorienting a substantial amount of interest and energy toward raising the general levels of wellness among all peoples. This calls for spelling out in objective terms what high-level wellness actually means for the individual, the family, and the social structure.

THE HEALTH GRID

In order to concretize the goal of high-level wellness, it is essential to shift from considering sickness and wellness as a dichotomy toward thinking of disease and health as a graduated scale. For the purposes of this paper, this scale is conceptualized as one axis of a "health grid." The health grid is made up of (1) the health axis, (2) the environmental axis, and (3) the resulting health and wellness quadrants, that is, (a) poor health in an unfavorable environment, (b) protected poor health in a favorable environment, (c) emergent high-level wellness in an unfavorable environment, and (d) high-level wellness in a favorable environment. The environmental axis includes not only the physical and biological factors of the environment but also socioeconomic components affecting the health of the individual. The health axis ranges from death at the left extremity to "peak wellness" at the right. The area in between the extremes proceeds through serious and minor illnesses into the area of positive health or freedom from illness. Thereafter, it moves into an area of good health at present largely uncharted and undifferentiated, toward a goal as yet but dimly perceived which is indicated as peak wellness. This goal represents the extreme opposite of death, that is, performance at full potential in accordance with the individual's age and make-up. To make effective headway toward this goal, we need to crystallize our concept of what the goal is, not only for the individual but also for the family, the community, and society generally.

Since the nature of this goal is ever changing and ever expanding, we will probably never reach it in absolute terms; but we can come to know and appreciate its essential characteristics in relative terms. As the goal, at first seen far above

us, becomes clearer and stirs response from deep within us, we will reach out toward it and fight for high-level wellness even as we have fought so valiantly and so long against sickness and death.

THE SPIRIT OF MAN

Although this goal can be seen but dimly from our present level of knowledge, one element of certainty which emerges in clear relief is that we can no longer ignore the spirit of man as a factor in our medical and health disciplines. Many of us, as physicians and health workers, have become increasingly dissatisfied with our disciplines, which are designed as though the sum total of our concern is for the body and the mind of man, leaving to metaphysics and religion the affairs of the spirit. As if we could divide the sum total of man thus! If we are to move in the direction of high-level wellness for man and society, we cannot ignore the spirit of man in any discipline. In fact, the essence of the task ahead might well be to fashion a rational bridge between the biological nature of man and the spirit of man—the spirit being that intangible something that transcends physiology and psychology.

The spirit of man stems largely from within him. Consequently, we must find ways of making him more aware of his own inner world through which he conceptualizes and interprets his perceptions of the outer world. This will bring us inevitably, sooner or later, into the arenas of social and religious affairs and into a multitude of controversial issues.

For most of us reared in the Western culture, a deep cleavage exists between the realm of the spirit and that of the body. Consequently, we have tended to subdivide the study of man into three major areas—the body, primarily the concern of the physician; the mind, largely the concern of the educator, psychologist, and psychiatrist; and the spirit, entrusted to the custody of the religious preceptors. Similarly, we have been inclined to consign the development and maintenance of man's physical, social, and economic environment largely to economic and political leaders.

This fragmentation of man into areas over which various groups struggle to maintain their jurisdiction appears to be nonsensical, since it tends to defeat the purposes of each group, which strives for the enrichment and fulfillment of that particular segment of man's nature over which it undertakes to maintain jurisdiction. Harmony between jurisdictions can come to pass only when each special interest group realizes that it does not and cannot have a monopoly over a particular area of the nature of man. Harmony will result when the fact is faced that man is a physical, mental, and spiritual unity—a unity which is constantly undergoing a process of growth and adjustment within a continually changing physical, biological, social, and cultural environment.

It is natural that the religious leader, for example, express his particular concern for the spirit of man, but this should not lead him to ignore the body and mind of man or the environment in which man lives, since all these elements affect the well-being of the spirit. Nor should it lead him to the exercise of a monopoly over the spirit of man. The physician, on his part, must take into account spiritual as well as physical considerations if he is to do an effective job of helping his patient toward good health of body and mind. For no person can be well physically if he is sick spiritually.

It is natural for each group competent in a special field of knowledge to approach the study and care of the well-being of man from its own particular point of vantage, but this must not preclude considerations of the unity of man as a whole living within a constantly changing total environment. High-level wellness can never be achieved in fragments, ignoring the unity of the whole.

To the study of man as a unity living within a total environment, the fields of medicine and health have much to offer. To adventure along this pathway of study and responsibility calls for the creation of methods by means of which various levels of wellness can be recognized objectively. Since this proposal has been developed more fully elsewhere,[1] it suffices here to say that, from the standpoints of medicine and health, the principal disciplines contributing to such a science will probably be biochemistry, physiology, and psychology.

The types of questions needing answer

MAALOX® ADDS MUSCLE TO ASPIRIN

ASCRIPTIN (RORER)

particularly suited for arthritic patients

Combining the antacid MAALOX with aspirin increases both absorption and utilization of the salicylate. As a result, ASCRIPTIN acts twice as fast as plain aspirin and analgesic action lasts much longer due to maintenance of higher plasma salicylate levels.

Gastric irritation seldom occurs with ASCRIPTIN even when large doses are given over prolonged periods.

Of particular value in arthritis and rheumatic disease, ASCRIPTIN is an excellent salicylate for routine use.

Formula: Acetylsalicylic acid 0.30 Gm., MAALOX (magnesium-aluminum hydroxides) 0.15 Gm.
Offered: Bottles of 100 and 500.

WILLIAM H. RORER, INC. Philadelphia 44, Pa.

simultaneous application of CONTINUOUS ULTRASOUND OR PULSED and ELECTRICAL STIMULATION

BURDICK'S { UT-400 MS-300 COMBINATION

The MS-300 Stimulator has been approved by the F.C.C. for use in conjunction with the UT 400 Ultrasound unit.

Simultaneous use of the Burdick UT-400 Ultrasound unit and the new MS-300 Muscle Stimulator offers a new dimension in ultrasonic therapy — combining the massage action of electrical stimulation with the established physiological effects of ultrasound.

For complete information on the use of the UT-400 and MS-300—individually, or as a combination — please contact your local Burdick representative or write us directly.

Burdick

THE BURDICK CORPORATION
MILTON, WISCONSIN
Branch Offices: New York • Chicago • Atlanta • Los Angeles
Dealers in all principal cities

are: How do we distinguish and classify degrees or levels of wellness? What are the effects of age, sex, and race on these levels? In what ways can we recognize a particular level in and of itself so as to be reasonably sure we are dealing with a homogenous group?

If an objective yardstick of wellness can be calibrated in biochemical, physiological, and psychological terms, it would soon become a powerful new tool for the physician, enabling him to recognize low-level wellness and to develop therapies to raise lower levels to higher ones.

If and when it becomes possible to differentiate between levels of wellness, all the indexes now available to us in the measurement of disease and death will become available to us in the area of positive health.

Wellness levels would then become susceptible to measurement in terms of prevalence rates much in the same way we now measure morbidity. Furthermore, we should be able ultimately to calculate the frequency constants of such measurements, correlating them with related social and economic phenomena.

STEPS WHICH CAN BE TAKEN TO QUANTIFY POSITIVE HEALTH

Even though such diagnoses of levels of wellness are not now available, much can be done to quantify positive health, for example:

1. Effect refinements in incidence and prevalence rates to demarcate more clearly the area of positive health from that of illness and disability.

2. Develop susceptibility indexes through the use of biochemical and functional tests to differentiate groups of persons most susceptible to specific diseases and conditions.

3. Establish precursors-of-disease indexes, closely related to the foregoing and designed to show variations from the normal.

4. Select groups of people who are disease-free and who are making full use of their talents, capacities, and potentialities; then measure them by biochemical, functional, and psychological tests to establish the characteristics of those enjoying a high level of wellness. Such groups would need to be selected so as to be representative of the various ages, sexes, and racial combinations.

Possibilities of measuring levels of wellness in the family have been set forth elsewhere.[3] They involve special studies aimed at obtaining answers to four major areas of assessment: (1) What are the day-to-day functional and emotional interrelationships of the family members? (2) What activities occupy the family and its members? (3) What values are important to the family and its members? (4) To what degree does the illness or wellness of a family member reflect the health status of the family as a unit?

It is worth pointing out that, if and when it becomes possible to diagnose levels of wellness in the individual, a very great advantage will accrue to social science technics. For instance, the researcher trying to evaluate the effect of different types of community life on the family or on the individual could select a sample of individuals and measure the effect on their levels of wellness of varying community conditions.

Once the concept of high-level wellness as a health goal has been crystallized and enriched by many minds contributing to it from their own points of reference, the battle for wellness in man and society will be joined. There must be many points of engagement if the battle is to be won.

KNOW THYSELF

It is the author's view that the central bastion to be conquered involves teaching people how to "know themselves." Psychology tells us through laboratory demonstrations that our perceptions of the outer world are indissolubly linked with the concepts and emotions fixed in our minds and body tissues. Without a knowledge of one's inner self, understanding of the outer world cannot have breadth and depth. A mind tortured with prejudice, hate, and fear projects itself in distorted human relationships.

Although psychiatrists have done much to relieve the twisted minds of the mentally ill, little has been undertaken to help ordinary people, classified as "well," to know themselves and thus become better balanced and able to meet their daily problems more adequately. How much of the demand for sleeping pills,

alcohol, and tranquilizers is due to this deep-felt need?

It will not be easy to help some adults achieve a better understanding of self. In fact, it is quite likely that the majority of people are fleeing from a deeper knowledge of themselves. With the very young, the task will be less difficult.

Since the personality of the child is largely formed in the preschool years, we must find ways to teach parents the importance of this inner world and how best to guide and nurture the child in his plastic early years, so that he may later be capable of high-level wellness and reach a mature and secure adulthood.

This process calls for the exercise of maturity and wisdom in addition to all the guidance that science can bring to bear. Growing children need broad and diverse opportunities for self-realization. Contact of the child with a wise and mature mind during this period offers one of the best means by which insight may be gained into family and social values and objectives. Maturity and wisdom must be made available to the growing infant and child in order to encourage, temper, and season his explorings and adventurings of self.

RESOURCES OF WISDOM AND MATURITY

Untapped resources of wisdom and maturity are available to the nation among its retired people. Persons no longer active in their careers, but who have lived rich, full lives, acquiring wisdom and maturity in the process, might become part-time companions and counselors to our children, particularly in the case of the gifted child who feels lost without intellectual supplementation of his normal family and school life. Let us call on retired persons of special competence and in good health to return to active life within the community. Let us ask them to help with the children who need extra intellectual stimulus and wise understanding. Let us ask the best qualified of them to serve as advisers to the "sick" family and as special custodians of the culture of the group, so to speak. The community needs them and they need the community.

CREATIVE EXPRESSION

In the fight for high-level wellness, action to enhance the importance of creative expression in our culture is a must. Creative expression is a most important element in the bridge between the biological nature of man and the spirit of man. The creative spirit resides within every living person. It can be kindled in any man, woman, or child. "What is the creative spirit?" you ask. At the time, I defined it as "an expression of self, adventuring into the unknown in search for universal truth."[3] However defined, we need to value it highly and nurture it well, since man's position of dominance in the world stems more directly from this quality than from all others.

Man finds discovery both absorbing and satisfying. With creative expression comes intense inner satisfaction. At the same time, it permits man to contribute of himself to the social group and thus form bonds with his fellow man of love, trust, and security. Creative expression and love of one's fellows satisfy deep psychological and emotional needs in our inner world and simultaneously are radiated outward to bring us to the fullness of life of which man is capable.

When we learn how to diagnose high-level wellness through objective measures, we shall probably find that a substantial amount of creative expression, altruism, and love in daily life is essential for the approach to a high state of well-being. Through the development and application of these values in daily life, we will achieve self-confidence and faith in ourselves. This in turn will bring growth of self, development toward fuller maturity, and a balanced wellness of body, mind, and spirit.

The goal of high-level wellness for man and society can be achieved, though not easily. The needs are for a clear-cut concept and dedication to it; for money and research; for understanding, courage, and a reassessment of basic values; for a positive orientation toward life and society. We must dare to dream, "dreams are the seedlings of realities."

1. Dunn, Halbert L. Points of Attack for Raising the Levels of Wellness. J.Nat.M.A. 49, 4:225-235 (July), 1957.
2. ———. How Well Is Your Family? Scheduled for publication in an early issue of Today's Health.
3. ———. Your World and Mine. Essays on Human Relations. New York, N. Y.: Exposition Press, 1956.

thanks to
DESITIN®
hemorrhoidal
SUPPOSITORIES
with cod liver oil

Samples and literature available from
DESITIN CHEMICAL COMPANY • 812 Branch Ave., Providence 4, R. I.

NEW

from

Mead

Johnson

a myo- **-vascular relaxant**

selective peripheral action to relieve symptoms of arterial insufficiency[1]—

intermittent claudication
leg pain
coldness and numbness of extremities
in
Arteriosclerosis Obliterans
Diabetic Vascular Disease
Buerger's Disease
Thrombophlebitis

VASODĪLAN®

Pronounced VĀ-ZŌ-DY-LAN

Isoxsuprine hydrochloride, Mead Johnson

Mead Johnson is proud to announce the availability of VASODĪLAN, an unusual new compound with myo-vascular relaxant action. The unique myo-vascular action of this substance is manifested by selective relaxant effects on smooth muscle of the peripheral and cerebral vascular beds and of the uterus.

A major indication for VASODĪLAN is in the symptomatic treatment of peripheral vascular disease.

brings blood to the deep tissues by direct action on the arterial wall[1-3]

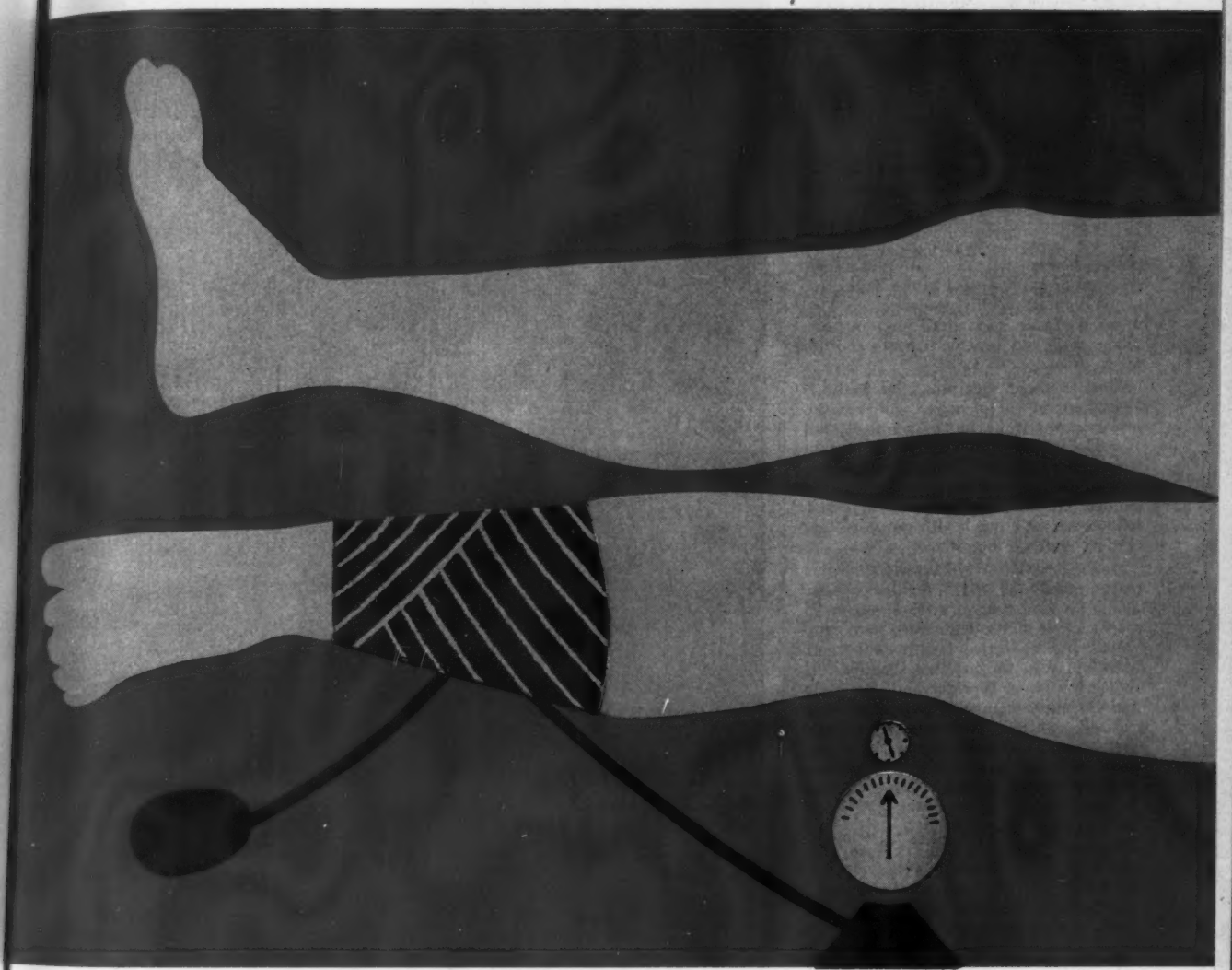
with remarkable safety in recommended doses
without adverse effects on coronary flow[1,2]
without troublesome hypotension or tachycardia[1,2]
without renal effects[1,2]
without increase in gastric acidity[2]
without ganglionic blocking action[1-3]
without development of tolerance[1]

71559

Available as VASODĪLAN Tablets, 10 mg., bottles of 100. VASODĪLAN Injection, Ampuls, 2 cc. (5 mg./cc.), boxes of 6.

Oral Dosage: 10 or 20 mg. (1 or 2 tablets) three or four times a day. For complete details on indications, dosage, administration and clinical background of VASODĪLAN, see the brochure on this product available on request from Mead Johnson and Company, Evansville 21, Indiana.

Bibliography: (1) Kaindl, F.; Samuels, S. S.; Selman, D., and Shaftel, H.: Angiology, to be published. (2) Kaindl, F.; Pärtan, J., and Polsterer, P.: Wien. klin. Wchnschr. *68*:186, 1956. (3) Brücke, F., et al.: Wien. klin. Wchnschr. *68*:183, 1956.



Mead Johnson
Symbol of service in medicine

The Federal role in the nation's health*

Elliot L. Richardson†

With the exception of a flurry of health activities during and after World War I, the Federal Government played a very limited role in family and community health until the thirties. During the First World War, for example, the Public Health Service was authorized to provide extra-cantonment sanitation activities and to inaugurate a venereal disease control program. And when the disastrous influenza pandemic hit the United States in 1918-19, Congress appropriated $1 million to the Public Health Service to help suppress this disease.

In the postwar period Federal health activities languished. Then the great depression of the early thirties brought the Social Security Act, which prepared the way for wider Federal participation in public health activities. A substantial program of grants-in-aid to the States for general public health purposes was authorized. Later, specialized programs for tuberculosis and venereal disease control were added.

Despite these measures, the Federal investment in public health and medical research was quite meager until World War II. In 1940, for example, a year in which the Federal budget was $6.2 billion, only $3 million was spent for medical research and an additional $19 million for all other health purposes, including grants to the States.

At the onset of World War II, with the mass tragedy of 1918's influenza pandemic far from forgotten, there emerged a realization of the vital roles that individual and collective health could and would play in the national security. In the early days of World War II the Federal Government quickly recognized that a healthy citizenry was vital to winning the war and that bold approaches to the prevention and cure of disease must have stimulus as well as supplementary financial support.

In consequence, the now widely used cooperative approach to medical research was evolved by universities, foundations, industries, and government at local, State, and Federal levels—a pattern that deserves to flourish for a long time to come.

I need not recount the dramatic medical achievements that have resulted from this cooperative approach to research during the past decade and a half. Never before in history has there been such an extraordinary accumulation of new medical knowledge and such a swift advance in technical methods and skills for the application of that knowledge.

As a result, we now have in America a citizenry that is keenly interested in health and generally aware of what is available in medicine. The citizen, the consumer of the medical product, not only expects medical science to go forward at even a faster pace but also insists that the products, techniques, and skills that derive from current achievements be readily accessible to all who need them. Indeed, today the Federal Government is expected to be responsive, to a degree unknown in any former time, to inexorable demands for medical and public health services which no single group acting alone could ever provide and which all groups in concert can barely meet.

At almost every point in the spectrum which has at one end the development of new knowledge in the health field and at the other the financing of medical care, the Federal Government has already assumed some degree of responsibility. That responsibility now includes participation with official and voluntary State and local agencies in the formulation of research policies in particular areas; the support of that research; aid to professional and technical education and training; assistance in the construction of new facilities and the renovation

*Reprinted from *Public Health Reports*, August 1959.

†Mr. Richardson, Assistant Secretary of Health, Education, and Welfare, delivered this address May 5, 1959, at the centennial meeting of the Kansas State Medical Society in Topeka, Kans.

Three-dimensional drawing showing microscopic view of hepatic cells.

the complete lipotropic therapy

choline
methionine
inositol
vitamin B_{12}
dessicated liver

methischol

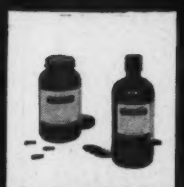
helps restore or maintain liver normality when hepatic damage occurs or threatens in

cirrhosis **hepatitis** **diabetes**
alcoholism **obesity** **atherosclerosis**

Methischol acts to remove hepatic fat, stimulate regeneration of new functioning liver cells, and lessen tendency to fibrosis and cirrhosis.

what goes on in the liver?

a multitude of physiological processes . . . the formation of vitamin A, fibrinogen, heparin, prothrombin; the storage of glycogen, iron, copper; the metabolism of carbohydrates, proteins and lipids, etc. The importance of maintaining normal liver function — and its repair when damaged — is readily apparent.



METHISCHOL
capsules:
100, 250,
500, 1000

syrup:
16 oz. and
1 gallon

Samples of METHISCHOL and literature available from

u.s. vitamin & pharmaceutical corporation
Arlington-Funk Laboratories, division
250 East 43rd Street, New York 17, N. Y.

of old; help in the prevention and control of disease; consultation and funds to help institutions to effect the most fruitful utilization of scientific and teaching faculties; financial aid to improve and expand institutions devoted to research and treatment; and finally, cooperation in strengthening and complementing private and public systems of financing medical care.

We cannot, therefore—even if we were inclined to do so—start from scratch in attempting to frame legislation designed to strengthen the capacity of the Federal Government to assist in dealing with the health problems of today and tomorrow. As we see it, our function is to take such additional action as may be necessary in a manner that will so far as possible preserve and strengthen the pattern of Federal, State, local, and private cooperation that has worked so well in the past. My aim will thus be to show how we in the Department of Health, Education, and Welfare are attempting to apply this approach to the problems in the field of health that seem to us most urgent. In so doing, I shall start with medical research, proceed from there to the needs of medical schools and related teaching institutions, describe our present thinking with regard to medical care facilities, and conclude by touching briefly on the financing of medical care.

MEDICAL RESEARCH

Amid all the vast array of urgently needed health, education, and welfare activities, medical research today occupies a favored position. It is the only one of which the sole question asked is, How much can usefully be spent? Although expenditures for medical research still represent only about 4 percent of the Nation's total investment in research and development, such expenditures have more than doubled in the last 5 years. The Federal Government's share, meanwhile, has gone up by almost 300 percent.

This phenomenal growth in the support of medical science has, of course, been fed by the very achievements of medical science. Each new discovery reinforces the public demand for still faster progress in the conquest of the cripplers and killers that are mankind's most ancient enemies. The consequences, however, for medical education and for the private agencies and organizations actively concerned with medical research, as well as for Government, are so significant and far-reaching as to cry out for careful study and evaluation. To make such a study, former Secretary of Health, Education, and Welfare Marion B. Folsom in 1957 appointed a committee of distinguished consultants under the chairmanship of Dr. Stanhope Bayne-Jones, formerly dean of the Yale University School of Medicine and technical director of research, Office of the Surgeon General of the Army. The committee presented its report, now generally refered to as the Bayne-Jones Report, in June 1958.

Over the past 4 months Secretary Flemming has devoted considerable time with the Surgeon General of the Public Health Service and the director of the National Institutes of Health, Public Health Service, and their staffs, to studying the full implications of this report. He has also reviewed the data obtained from a supplementary study of 20 medical schools conducted by the National Institutes of Health.

On the basis of these data it has been possible to project the probable rate of growth in expenditures for medical research and to formulate as a long-range national goal for such research a total annual expenditure of $1 billion by 1967. We assume, as a guide for national action, that the support of medical research should continue to be divided almost equally between Federal and non-Federal sources. It is expected, moreover, that the present pattern of support within the Federal Government will be generally maintained, with the National Institutes of Health providing most of the Federal share. This would mean an increase in National Institutes of Health expenditures for research from $209 million in fiscal 1959 to an annual rate of about $350 million by 1967.

Apart from their significance in establishing long-range goals, these studies have reinforced our firm belief that research, education, and training are inherently inseparable and that a successful research and training effort for the

automation
at its finest
in the new,
NEW
PEL-CLAVE
MODEL GN

All the splendid features of the popular, double-jacketed FL-2 and HP-2 autoclaves PLUS:

+ SINGLE KNOB CONTROL.
+ AUTOMATIC TIMER.
+ SAFETY DOOR. CANNOT BE OPENED UNDER PRESSURE.
+ THERMOMETER IN DISCHARGE LINE.
+ LARGE (7 X 14) CHAMBER.
+ STAINLESS STEEL CONSTRUCTION.

To sterilize, simply turn control knob to STER, set timer for length of cycle. When exhaust light indicates conclusion of the cycle, turn control knob to EXHAUST, unload the chamber. Complete operation is simplicity in the highest degree.

SEE THIS NEW MODEL AT YOUR DEALER
. . . OR WRITE DIRECTLY TO:

the Pelton & Crane company
CHARLOTTE 3, NORTH CAROLINA

Nation as a whole must be securely grounded upon a sound educational base. For this reason we are more concerned than ever about the urgency of immediate steps to correct the imbalance between medical research and education that has tended to result from the very magnitude of Federal research expenditures.

Our analysis has, for example, confirmed the view that the National Institutes of Health should pay not only the direct costs of any research project which they support but should also pay whatever share of indirect costs, such as administrative salaries, heat, light, and power, and maintenance of buildings, is fairly attributable to that project. Until this is done, each new project undertaken by a medical school will result in an additional drain on its operating funds, thereby weakening its capacity to carry out its teaching mission. Similarly, hospital care will suffer from the diversion of uncommitted income to the support of research. We propose, therefore, at the earliest opportunity, to renew the fight to eliminate the limitation on the payment of indirect costs which for a number of years has been contained in our appropriations acts.

A related problem concerns the very considerable number of medical school and hospital personnel whose salaries are being paid in full or in part out of research grant funds. Under existing law no assurance can be given that such funds will continue to be provided in predictable amounts. The result is that no security of tenure and no firm career ladder in medical research can be offered to the men and women engaged in such projects.

To remedy this and at the same time to make possible a degree of flexibility in the allocation of research funds with a minimum of red tape, we have under consideration recommendations for legislation that would authorize the allotment to the research institution of a percentage of total research appropriations on an "institutional grant" basis. To the extent, in other words, of say 15 percent of such appropriations, we would make allotments among research institutions in a manner that would not require specific project applications and that would enable them to utilize the funds for the continuing work of their senior investigators.

GRANTS FOR PROFESSIONAL TRAINING

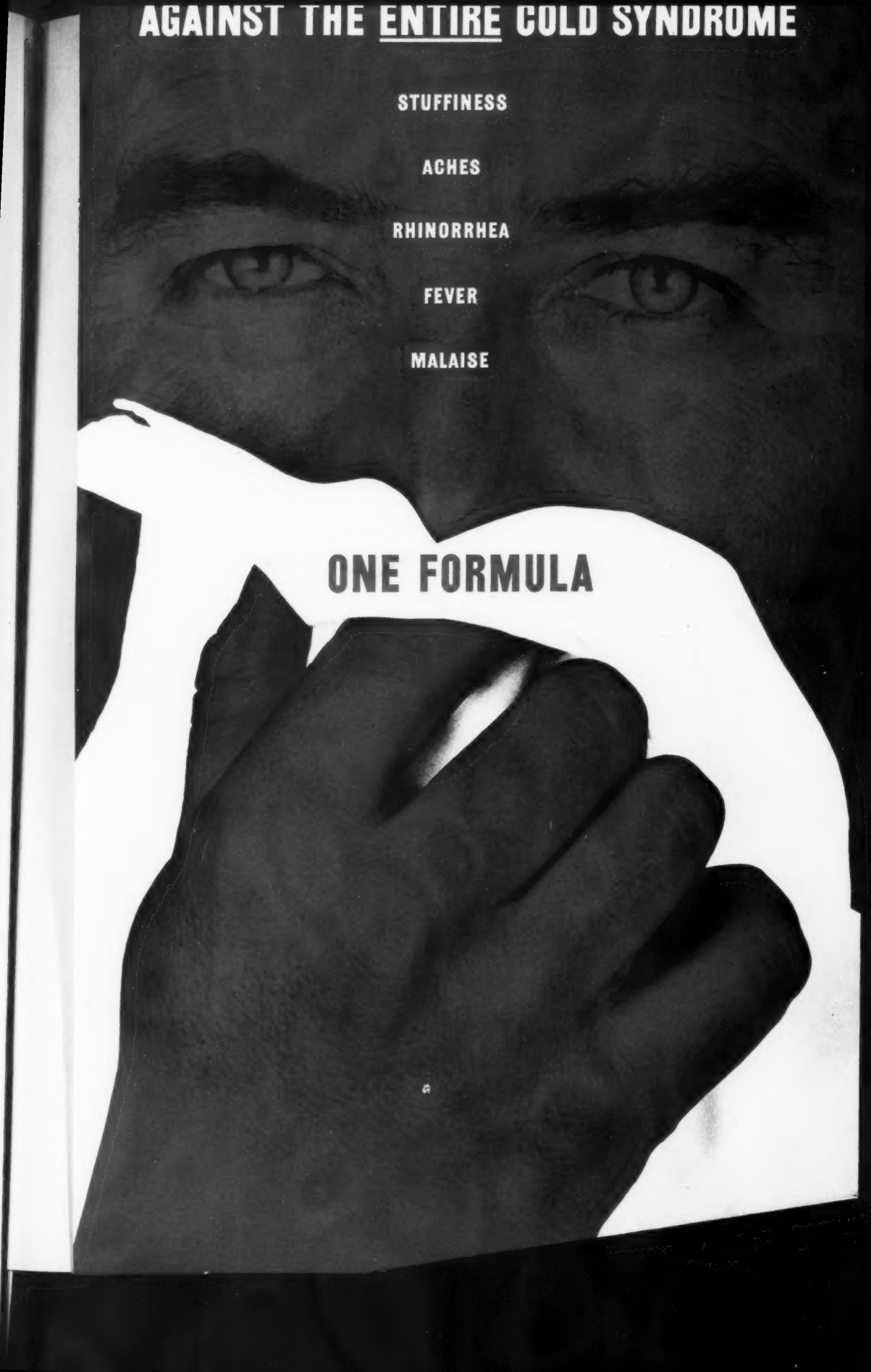
In conjunction with its projection of future expenditures for medical research, the Bayne-Jones Report warned that the present shortages of professional and technical manpower are likely to grow even more critical as research demands increase. Larger numbers of well-trained professional people are going to be needed not only to conduct the search for new knowledge but to bring this knowledge to our rapidly expanding population in the form of better medical care. Speaking to the latter point, the Bayne-Jones group predicted, "A minimum of 14 or as many as 20 new medical schools will have to be built (by 1970) if the existing number of physicians per 100,000 population is not to fall."

The Public Health Service, with the help of a new advisory group headed by Frank Bane, former executive director of the Council of State Governments, is now systematically studying the whole question of the need for physicians and exploring the ways in which this need may be met. This study, together with the National Institutes of Health study of 20 medical schools and the Bayne-Jones Report, should provide a strong basis on which to develop national goals for medical education and research.

The Federal Government, meanwhile, is already making significant contributions toward the reduction of manpower shortages in the health field. The National Institutes of Health of the Public Health Service, for example, will spend in 1959 more than $60 million in stipends for individuals preparing for careers in medical research, for the support of traineeships for persons intending to become specialists in one of the fields covered by a categorical institute, in grants to teaching institutions for the support of training courses, and for research fellowships. In addition, the Public Health Service is spending $57 million for training in water pollution control activities, advanced nursing, and other public health responsibilities.

ASSISTANCE TO RESEARCH AND TRAINING INSTITUTIONS

All these programs—research grants,


AGAINST THE ENTIRE COLD SYNDROME
STUFFINESS
ACHES
RHINORRHEA
FEVER
MALAISE
ONE FORMULA

NEO-SYNEPHRINE®

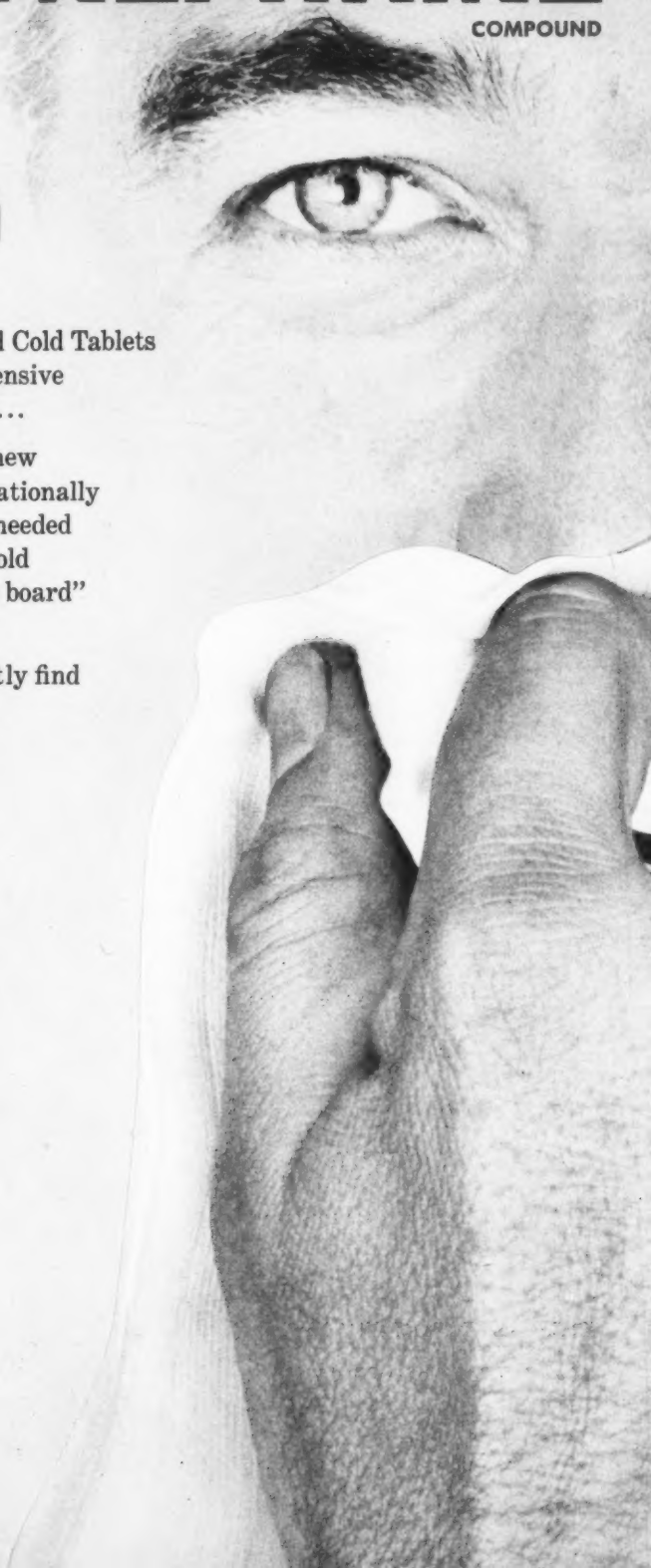
COMPOUND

CONTROL OF COMMON COLD SYMPTOMS with

Neo-Synephrine Compound Cold Tablets is pharmacologically comprehensive and clinically practical...

COMPREHENSIVE because in this new preparation are rationally combined drug actions that are needed to control the common cold symptomatology "across the board"

PRACTICAL because the average patient will promptly find relief from his distress.



E® COLD TABLETS

UND

For full-range symptomatic relief orally each tablet of Neo-Synephrine Compound provides:

VS. NASAL STUFFINESS, TIGHTNESS—
Neo-Synephrine hydrochloride...5 mg.
pre-eminent, orally effective decongestant

VS. ACHES, CHILLS, FEVER—
Acetaminophen (N-acetyl-*p*-aminophenol)...150 mg.
modern analgesic and antipyretic

VS. RHINORRHEA—
Thenfadil® hydrochloride ...7.5 mg.
effective, well tolerated antihistaminic

VS. LASSITUDE, MALAISE—
Caffeine...15 mg.
dependable, mild, stimulating agent

DOSAGE: *Adults*—2 tablets three times a day

Children 6 to 12 years—1 tablet three times a day

Bottles of 20 and 100 tablets

Winthrop LABORATORIES

NEO-SYNEPHRINE®

COMPOUND

CONTROL OF COMMON COLD SYMPTOMS with

Neo-Synephrine Compound Cold Tablets is pharmacologically comprehensive and clinically practical...

COMPREHENSIVE because in this new preparation are rationally combined drug actions that are needed to control the common cold symptomatology "across the board"

PRACTICAL because the average patient will promptly find relief from his distress.

E® COLD TABLETS

UND

For full-range symptomatic relief orally each tablet of Neo-Synephrine Compound provides:

VS. NASAL STUFFINESS, TIGHTNESS—
Neo-Synephrine hydrochloride...5 mg.
pre-eminent, orally effective decongestant

VS. ACHES, CHILLS, FEVER—
Acetaminophen (N-acetyl-*p*-aminophenol)...150 mg.
modern analgesic and antipyretic

VS. RHINORRHEA—
Thenfadil® hydrochloride ...7.5 mg.
effective, well tolerated antihistaminic

VS. LASSITUDE, MALAISE—
Caffeine...15 mg.
dependable, mild, stimulating agent

DOSAGE: *Adults*—2 tablets three times a day

Children 6 to 12 years—1 tablet three times a day

Bottles of 20 and 100 tablets

Winthrop LABORATORIES

TO CLEAR THE AIRWAY

topically
in colds,
sinusitis
and allergic
rhinitis

NTZ®

Nasal Spray

quick
and
lasting
decongestion

Combining three effective intranasal medications, NTZ produces sustained decongestion ...aeration...sinus drainage. There are virtually no side effects, and NTZ maintains therapeutic action with repeated use. NTZ is available in a convenient, nonbreakable plastic squeeze bottle of 20 cc. that delivers a fine, even spray and does not leak. Even small children use it easily.

***N**eo-Synephrine® hydrochloride, 0.5%* —
accepted vasoconstrictor and decongestant

***T**henfadil® hydrochloride, 0.1%* —
dependable topical antihistaminic

***Z**ephiran® chloride, 1:5000* —
antibacterial wetting agent and preservative

Winthrop LABORATORIES *New York 18, N.Y.*

NTZ, Neo-Synephrine (brand of phenylephrine), Thenfadil (brand of thenyldiamine) and Zephiran (brand of benzalkonium, as chloride, refined), trademarks reg. U.S. Pat. Off.

COPYRIGHT 1957, 1959, WINTHROP LABORATORIES PRINTED IN U.S.A. 9-59

traineeships, fellowships, even training grants—amount in effect, so far as the research or teaching institution is concerned, to payments for the purchase or reimbursement of services. To the extent that such payments are applied to activities that the institution would in any case feel bound to undertake—and certainly a medical school would be obliged to support a certain amount of research even if no Federal grant program existed—they can of course be regarded as aid to the institution. Yet it is equally clear that the research and research-related training programs now being carried out are much larger in volume and different in character than they would be if Federal funds were not available. Indeed, the programs would not be serving their purposes if this were not the case, for they were not designed primarily for the assistance of institutions. Frequently, in fact, as I have tried to make clear in discussing the need for the full payment of indirect costs and for institutional grants, the programs operate as burdens on the institution.

We cannot escape, therefore, the obligation to face squarely the need for more direct forms of Federal assistance to health training and research institutions. For medical schools, dental schools, and schools of public health, particularly, this need is becoming increasingly acute. As President Eisenhower stated in addressing the National Fund for Medical Education a year and a half ago:

> The rapid accumulation of new medical knowledge is flooding in like a tide in the Bay of Fundy. There is on all sides a mounting demand for health services by our communities. Under these demands, the medical schools in America today face inherited responsibilities beyond what they are financially able to meet. The medical progress of which we are so justly proud has involved these teaching institutions in a struggle for solvency and survival.
>
> The constantly widening scope and complexity of medical education has, within the space of a few decades, quadrupled the cost of producing a qualified doctor. Tuition now pays but one-fifth of the student's total education cost.
>
> Accordingly, there is—today—a great gap to close; the gap between the ceiling of medical school receipts from all sources and the racing increase in costs of teaching, research, and medical care.

Under present law the only Federal program that provides direct help to medical schools and kindred institutions is the program of matching funds for the construction of research facilities. First enacted in 1956 and extended in 1958 until 1961, this program authorizes expenditures up to $30 million a year for buildings used in the actual conduct of research, or for that part of a building to be devoted to research, but not for buildings or parts of buildings used for teaching or administration. Although authority to make grants for the latter purpose has been advocated by the Administration in each of the last 3 years, Congress has not yet seen fit to grant it. Budgetary considerations permitting, we shall probably try again. Next time, however, we may modify our earlier proposals by suggesting that grants be restricted to buildings needed in order to expand enrollments or to prevent their reduction.

only the new

BIRTCHER Model 300 ELECTROCARDIOGRAPH

has all these features

SPEEDS: 25/50 mm/sec.

2 year guarantee

19 other engineering achievements

superior AC rejection

FULL SIZE

THE BIRTCHER CORPORATION

Of course, the Birtcher has and always did have: Both 25 and 50mm paper speeds; A 2 year guarantee; Automatic continuous timing; Automatic blanking between leads; The fastest, simplest paper loading yet conceived; Full width paper; Full size trace; Linearity of base line at any point on the trace; Higher AC rejection; Accuracy beyond question, and now . . .

One hand operation

The new LEVELTEMP® styli

THE BIRTCHER CORPORATION
Department JOA-1059
4371 Valley Boulevard,
Los Angeles 32, California

Rush me details on the Birtcher Model 300 Electrocardiograph.

Doctor_____

Address_____

City_____ Zone___ State____

So far as outright Federal grants for operating purposes are concerned, the only beneficiaries at the present time are the 11 schools of public health. In recognition of the fact that most of their graduates enter public service, Congress passed a bill in 1958 authorizing grants to these schools in an aggregate amount of $1 million a year. The act was limited to 2 years in duration and therefore expires in 1960. Assuming that it is to be extended, should it be confined to the schools of public health, be modified so as to restrict it to the support of special projects in public health training, or be expanded to include other types of teaching institutions in the health field? Should its significance as a precedent, in other words, be ignored, brought more nearly into line with the National Institutes of Health training grant programs, or extended? Most of us in the Department of Health, Education, and Welfare, especially those of us who have been wrestling with the needs of higher education as a whole, would hesitate long before recommending simple extension.

AID TO INSTITUTIONS PROVIDING PATIENT CARE

New weapons in the war against disease and training in their use are of little avail if we lack the facilities in which to employ them in caring for the sick. So great has been the need for such facilities, first as a result of the wartime deferment of construction and now because of the population boom, that the Federal Government has for more than 10 years been playing a major part in a nationwide cooperative program designed to meet this need. The Hill-Burton Act, which created the hospital survey and construction program in 1948, has been a tremendous success, particularly in building general hospitals. And yet most

quieting...calming
BUTISERPINE®
...has a gently controlling effect on blood pressure and tension, without unpleasant side effects.
...a conservative, safe amount of reserpine (0.1 mg. per tablet or teaspoonful) combined with 15 mg. BUTISOL SODIUM® butabarbital sodium.
Butiserpine Tablets, Elixir, Prestabs® Butiserpine R-A (Repeat Action Tablets)
McNEIL
McNEIL LABORATORIES, INC.
Philadelphia 32, Pa.

of the gain in new beds has been offset by increases in population, by obsolescence, and by the abandonment of old facilities as new facilities are constructed. Like Alice and the Red Queen, we have had to run like blazes to stay in the same place.

Eleven years ago we had about 60 percent of the general hospital beds we needed. Today, with the help of almost $1 billion in Federal funds and more than $2 billion in State, local, and private matching funds, 75 percent of the need for general hospital beds has been met. In addition, we now have 73 percent of the tuberculosis beds needed, as compared with 46 percent in 1948. In mental hospital beds we have slipped from 55 percent of the need in 1948 to 53 percent today. All in all, State plans show a remaining deficit of 888,000 hospital beds of all types and 323,000 nursing home beds.

An equally pressing problem has been the rapid upward spiral in the costs of hospital care, more than 179 percent in a decade. The search for means of combating this rise has been a central purpose in the allocation of research and demonstration project funds—$1,200,000 annually—under the Hill-Burton program. In our view, the results of experimentation in "progressive patient care" are particularly promising. This is a pattern of services making use both of physical facilities and of medical and nursing personnel in the manner best suited to the needs of the individual patient. It includes intensive care for critically ill patients, intermediate care for those requiring a moderate amount of service, self-care in a hotel type of setting for ambulatory patients, and long-term care for the chronically ill in a homelike atmosphere with periodic evaluation of progress and rehabilitation.

Concern with the high cost of hospitalization also underlies much of our recent thinking with respect to improvements in the Hill-Burton program. In this connection we are laying particular stress on finding ways and means of making the diagnostic and treatment center category of the program more useful. As the Hill-Burton Act now stands, we can make grants for the construction of such centers only where the center is formally affiliated with a hospital. Although we have considered asking for the complete elimination of this requirement, our present view is that it should be removed only for mental health clinics and diagnostic and treatment centers in remote areas.

The limitations of the Hill-Burton Act, however, are not the major barrier to the construction of more facilities for outpatient services. More important is the lack of readily available insurance against the cost of out-of-hospital care and treatment. It is heartening, therefore, that the health insurance industry has this problem under intensive study and has already taken a number of experimental steps toward providing such insurance. In addition to major medical expense insurance, which from its inception has been applicable to the costs of medical care wherever it may be provided, many insurance companies as well as Blue Shield plans now offer coverage against the costs of physicians' services in the home or office. In the meanwhile, we are continuing to search for ways of encouraging faster progress in this direction.

So far as facilities for acute care are concerned, the principal contribution of the Hill-Burton program has been toward the construction of new hospitals. Rural communities altogether lacking in hospital beds have been the chief beneficiaries. Needed in addition, however, is some form of assistance in financing the cost of repair and modernization of existing hospitals in urban areas. Several approaches to meeting this need are possible: earmarked grants, direct low-interest loans, mortgage insurance, or some combination of the three. These approaches are all under study in the Department. In addition, we believe that we should continue to emphasize the importance of experimentation in measures designed to reduce the cost of hospitalization. For this purpose we are considering the merits of expanding the research and demonstration authority of the Hill-Burton program so as to provide for direct grants—grants, in other words, not included in State allotments—for the building of experimental structures.

One other amendment to the Hill-Burton program that we expect to propose

is motivated both by the aim of avoiding unnecessary hospitalization in high-cost institutions and by awareness of the continuing increase in the number of the aged. This amendment would consolidate the chronic-disease hospital and nursing-home categories of the program into a new "long-term care facilities" category and increase the authorized appropriations for this category. For similar reasons we also support the provision in the pending housing bill of mortgage insurance for proprietary nursing-home construction, with assurance through State licensing agencies of adequate standards of care.

DISEASE PREVENTION PROGRAMS

Disease prevention programs are fundamental activities of the Public Health Service in cooperation with State and local health departments. Although the acute communicable diseases have declined in prevalence, keeping them under control requires unrelenting vigilance. Yet the very success of public health techniques in curbing the acute contagions has been accompanied by a steady rise in the chronic diseases, especially those of the heart and arteries, cancer, diabetes, and the debilitating disorders peculiar to old age. Research and epidemiological investigations into their causes, incidence, and cure are being conducted on a wide scale. So far as prevention is concerned, the greatest unmet need is in health education. Our efforts in this direction need intensification, and, if possible, the application of more vigor and imagination.

High priority among preventive health activities must also be given to the problem of maintaining a healthful physical environment. Modern technology, urban growth, and industrialization are daily making this problem more acute. Water pollution, waste disposal, food and drug contamination, smoke and smog, and nuclear fallout present hazards to health whose seriousness is not yet fully known. Radiation hazards in particular demand a comprehensive approach, and the Budget Bureau now has under study the relative responsibilities of the Public Health Service and the Atomic Energy Commission in this field. In addition, we in the Department of Health, Education, and Welfare are considering the possible need for some form of assistance to the States in the exercise of their radiological health responsibilities.

FINANCING THE COSTS OF MEDICAL CARE

Even after new knowledge has been won, doctors have been trained, facilities have been built, and everything possible has been done to prevent disease, there remains the problem of paying for medical care. Although we have reached new heights of prosperity in the United States, medical costs represent a serious problem to many American families. In 1957, for example, about half of all the families in this country had incomes below $5,000 and one family in seven had an income below $2,000. As many as one-quarter of all American families today have no cash savings, and in 1958 it was estimated that more than half of our families had savings of less than $500. For these people the costs of long-term and other disabling illness can be a crushing burden, particularly if the victim is the breadwinner.

For most people voluntary health insurance represents the best means of meeting the costs of medical care. Preliminary estimates for December 1958 show that just over 121 million people, or 70 percent of the population, then had some form of hospital insurance. Ten years earlier, in December 1947, the 53 million persons with such protection represented 37 percent of the total population.

There are, however, serious gaps in coverage of our older citizens, less than half of whom have any kind of health insurance. Summarizing an intensive study of this subject for the House Committee on Ways and Means, the Department of Health, Education, and Welfare last month reported:

> There is general agreement that a problem does exist. The rising cost of medical care, and particularly of hospital care, over the past decade has been felt by persons of all ages. Older persons have larger than average medical care needs. As a group they use about two and a half times as much general hospital care as the average for persons under age 65, and they have special need for long-term institutional care. Their incomes are generally considerably lower than those of the rest of the population, and in many cases are either fixed or declining in amount. They have less opportunity than employed persons to spread the cost burden through health insurance. A larger proportion

Like the hummingbird...

urised®

presents an unusual combination of speed, efficiency and safety in the control of

urinary infection

With swift, safe, sure antibacterial-antispasmodic action, URISED scotches most urinary infections . . . relieves pain, burning, urgency and frequency . . . speeds mucosal healing . . . relaxes smooth muscle mucosa . . . normalizes urinary tone and function.

The modern twofold URISED attack is nonsensitizing, free of side effects, effective in acid or alkaline media, often successful when sulfas and antibiotics fail.

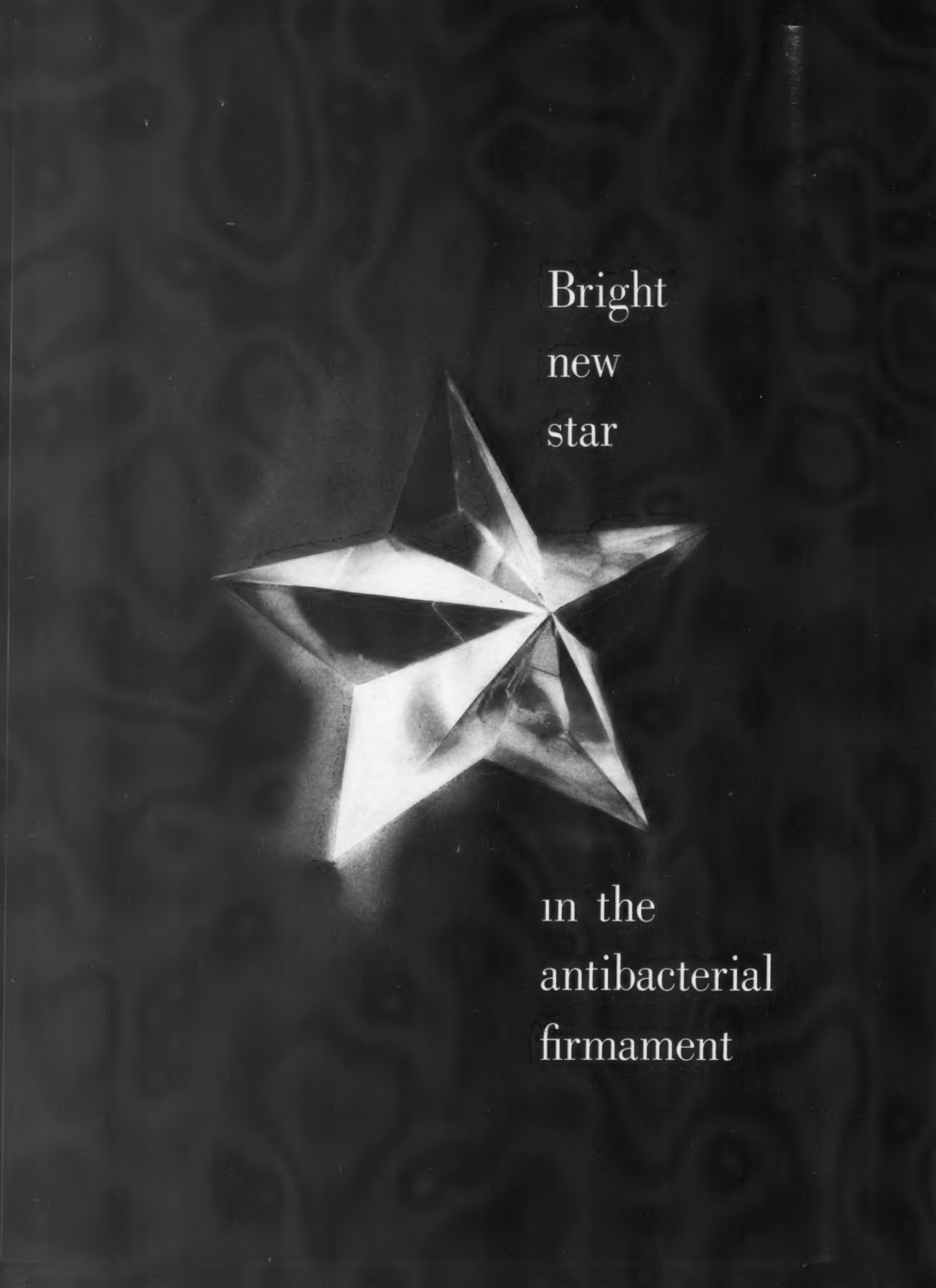
It has no known contraindications, confers many advantages of sulfas and antibiotics without danger of drug fastness or idiosyncrasy.

℞ URISED benefits in cystitis, urethritis, pyelitis, pyelonephritis, ureteritis, acute and chronic infections.

supplied:
Bottles of 100, 1000 and 2000 tablets. Each URISED tablet contains atropine sulfate 1/2000 gr., hyoscyamine 1/2000 gr., with methenamine, methylene blue, benzoic acid, salol and gelsemium.

Samples and literature on request.

CHICAGO PHARMACAL COMPANY
5547 No. Ravenswood Avenue
CHICAGO, ILLINOIS


Bright
new
star
in the
antibacterial
firmament

the first nitrofuran effective orally in systemic bacterial infections

ALTAFUR™

brand of furaltadone

Effective clinically in upper respiratory infections, pneumonias, soft tissue infections, bacteremia/septicemia, osteomyelitis, wound infections and pyodermas.

Effective in vitro against the following organisms (isolated from clinical infections listed above):

Organism	*Sensitive*	*Resistant*	*% Sensitive*
Staphylococci*	181	1	*99.4*
Streptococci	65	1	*98.5*
D. pneumoniae	14	0	*100.0*
Coliforms	34	3	*91.8*
Proteus	5	5	*50.0*
A. aerogenes	8	0	*100.0*
Ps. aeruginosa	5	4	*55.5*

*Includes many strains resistant to antibiotics.

As with all nitrofurans in *years* of extensive clinical use, there is little or no development of bacterial resistance with ALTAFUR.

NITROFURANS—a unique class of antimicrobials—neither antibiotics nor sulfonamides

EATON LABORATORIES, NORWICH, NEW YORK

of the aged than of other persons must turn to public assistance for payment of their medical bills or rely on "free" care from hospitals and physicians. Because both the number and proportion of older persons in the population are increasing, a satisfactory solution to the problem of paying for adequate medical care for the aged will become more rather than less important.

In our society the existence of a problem does not necessarily indicate that action by the Federal Government is desirable. The basic question is: Should the Federal Government at this time undertake a new program to help pay the costs of hospital or medical care for the aged, or should it wait and see how effectively private health insurance can be expanded to provide the needed protection for older persons?

The report itself does not attempt to answer this question, although it sets forth the argument on both sides. Building on the data contained in the report, we are now trying to develop an answer. It is not an easy task, and I would not venture to predict where we will come out. One thing, however, is sure: before reaching any final conclusion we will seek opportunities for consultation with representatives of the medical profession and other interested groups. This approach has helped to solve many health problems in the past, and we are confident that it will lead us to a sound solution of this one also.

As the President has eloquently declared:

> A healthy citizenry is the first defense line of the Republic. A healthy citizenry is capable, in peacetime, of expanding our economy; in times of critical tension, of carrying on without cracking or growing hysterical; in times of conflict, of showing the endurance and stamina upon which victories are built.

The role of the nurse in the control of staphylococcal infections in hospitals*

Evelyn R. Hamil, R.N.
Director of Nursing Services and Education,
Los Angeles County General Hospital

The role of the nurse in the control of staphylococcal infections in hospitals is no different from the role she should assume every day. There have been other resistant infections before staphylococci, and we can be reasonably sure still others will come into prominence. From a nursing standpoint, we should not limit a discussion of infection to any particular organism, but should remember the broad base from which we operate. Essentially, the nurse gives patient care or supervises and evaluates such care; she carries out certain procedures and applies scientific principles in so doing; and she teaches both employees and patients.

*Reprinted from *California's Health*, July 15, 1959. Presented as part of a panel discussion on staphylococcal infections at the meeting of the Southern California Public Health Association in Pasadena on December 5, 1958.

The only possible difference in the role assumed by the nurse is in the degree of emphasis placed on specific functions as occasioned by specific situations, such as the increase in staphylococcal infections. I would like to point out a few areas in which the nurse needs to direct specific and concerted attention, if she is to adequately assume her role in respect to staphylococcal infections in hospitals.

First, she has to recognize that this problem exists. With continued use of antibiotics, and the reliance on them by the medical staff, many nurses have become distressingly lackadaisical about the importance of aseptic technique and the necessity for good hospital housekeeping. In order to develop an understanding of the problem, the nurse must be acquainted with these facts:

The extent to which there has been a spread of infections in hospitals generally.
The extent to which there has been a spread of infections in the hospital in which she is working.
The areas of service in which the spread has taken place.
Causes of this spread.
How nursing is involved.

Nursing is vitally concerned with the research necessary for controlling hospital infections. Frequently it is a nursing employee who first of all sees the yellow discharge from an infant's eye, notices the red painful swollen breast of her postpartum patient, becomes suspicious of the failure of an incision to heal, or

PROTECT Little Braves' Bottoms

WITH Diaparene® CREME Peri-Anal® SPECIFIC For Stool Irritations

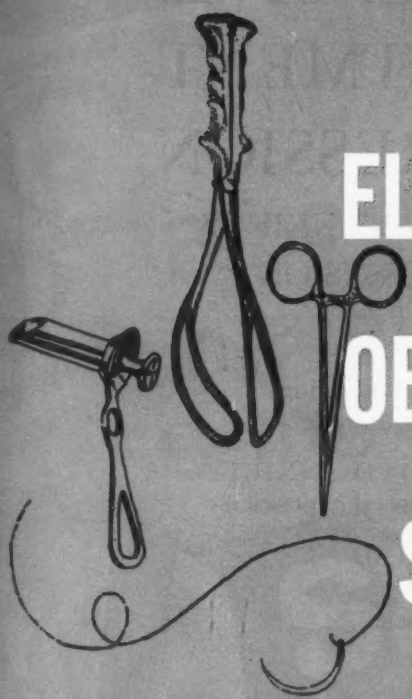
"DIAPARENE PERI-ANAL is an efficient and safe agent in the prevention and treatment of perianal dermatitis"* . . . newborn "sore-bottom" due to loose, transitional stools and irritations caused by diarrhea or loose stools following oral antibiotic therapy.

**Grossman, Leo, "A New Specific Treatment for Perianal Dermatitis", Arch. Ped., 71:173-79, June, 1955*

HOMEMAKERS PRODUCTS DIVISION
George A. Breon & Company, 1450 Broadway, New York 18, N.Y.

ANOTHER FINE PEDIATRIC SPECIALTY BY BREON

U. S. PAT. NO. 2,843,522



FOR EASIER ELIMINATION IN OBSTETRICS OR SURGERY

TARGET ACTION *specifically on the large bowel*

DORBANE®

(1, 8-dihydroxyanthraquinone)

selective peristaltic stimulant • smooth, overnight action • no griping • well tolerated • non-habituating
Available in 75 mg. scored tablets and suspension.

WHERE STOOL SOFTENING IS ALSO INDICATED

DORBANTYL® FORTE

(Dorbane, 50 mg. + dioctyl sodium sulfosuccinate, 100 mg.)*

Double-strength capsules for maximum economy and convenience.

DORBANTYL®

(Dorbane, 25 mg. + dioctyl sodium sulfosuccinate, 50 mg.)*

For lower dosage and in children.
Available in capsules and suspension.

*In proportions proved optimal by clinical trial in over 550 cases.
(Marks, M. M.: Clin. Med. 4:151, 1957.)

SchenLabs

SCHENLABS PHARMACEUTICALS, INC • NEW YORK 1, N. Y. Manufacturers of NEUTRAPEN® for penicillin reactions.

©TRADEMARKS REG. U.S. PAT. OFF. DORBANTYL FORMULA PATENTED 24559

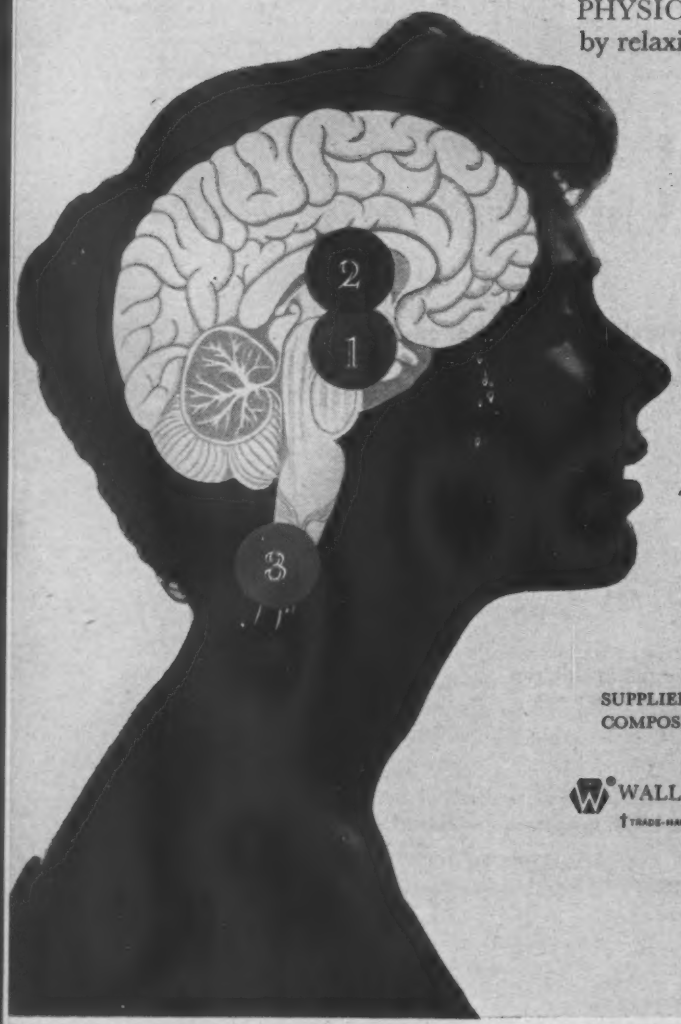
COMPREHENSIVE, THREE-LEVEL TREATMENT OF DEPRESSION

AND ASSOCIATED ANXIETY AND PHYSICAL TENSION

RELIEVES DEPRESSION
including symptoms such as crying, lethargy, loss of appetite, insomnia

RELIEVES ASSOCIATED ANXIETY
with no risk of drug-induced depression

RELIEVES ASSOCIATED PHYSICAL TENSION
by relaxing skeletal muscle



1
hypothalamus

2
thalamus and limbic system

3
spinal cord

▲Deprol▲†

benactyzine + meprobamate

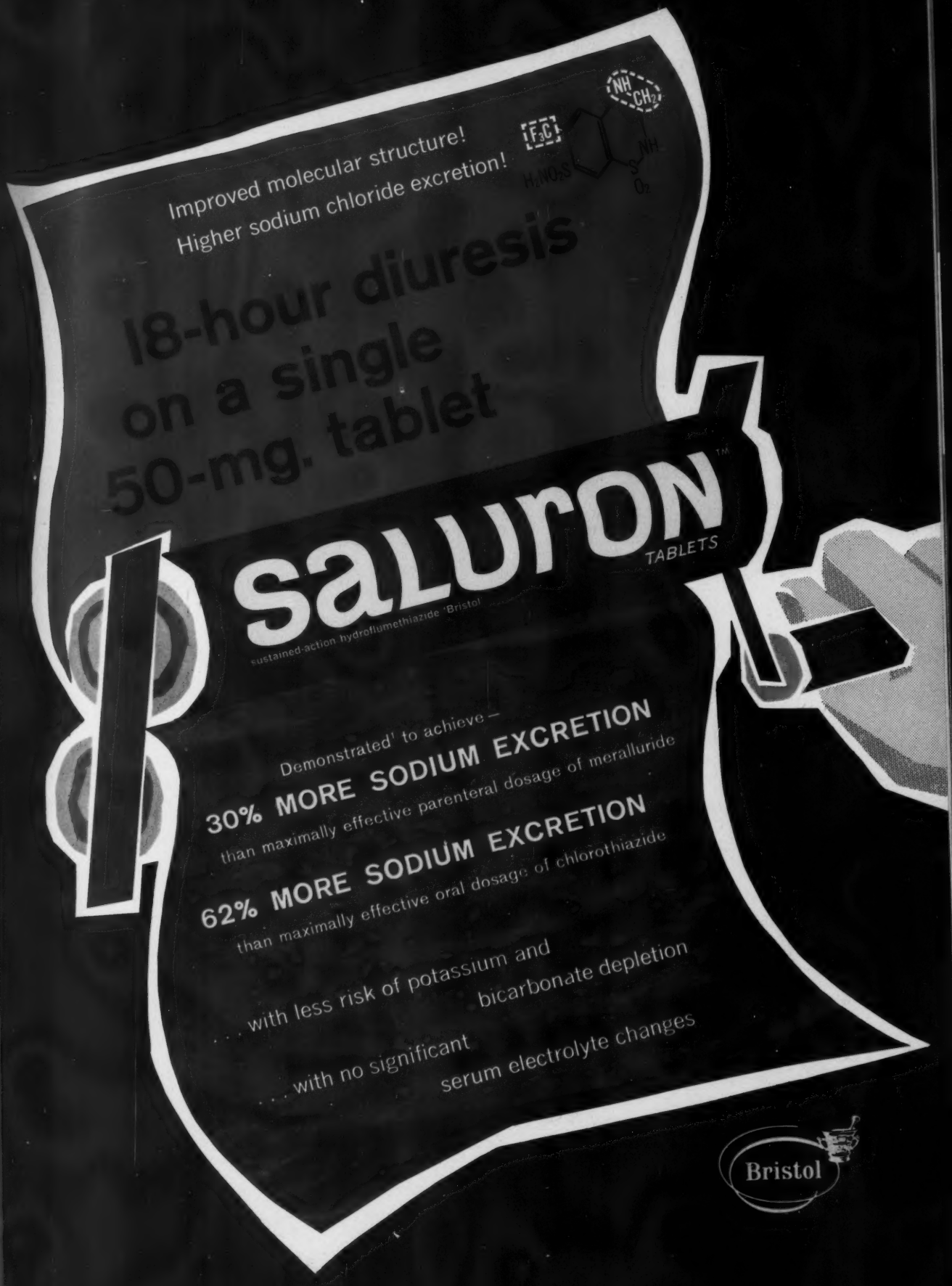
- confirmed efficacy
- documented safety

SUPPLIED: Bottles of 50 light-pink, scored tablets
COMPOSITION: Each tablet contains 1 mg. benactyzine HCl and 400 mg. meprobamate

WALLACE LABORATORIES • *New Brunswick, N. J.*

†TRADE-MARK

80-9190


Improved molecular structure!
Higher sodium chloride excretion!
18-hour diuresis on a single 50-mg. tablet
saluron™
TABLETS
sustained-action hydroflumethiazide 'Bristol'
Demonstrated[1] to achieve –
30% MORE SODIUM EXCRETION
than maximally effective parenteral dosage of meralluride
62% MORE SODIUM EXCRETION
than maximally effective oral dosage of chlorothiazide
. . . with less risk of potassium and bicarbonate depletion
. . . with no significant serum electrolyte changes
Bristol

A RECORD OF PROGRESS
FIRST — chlorothiazide
NEXT — hydrochlorothiazide
THEN — flumethiazide
NOW — sustained-action hydroflumethiazide 'Bristol'

NOW···more efficient, sustained diuresis with a single 50 mg. tablet of this new and improved oral diuretic

SALURON™

sustained-action hydroflumethiazide 'Bristol'

TABLETS

clinical research findings

- Effective dose 50 mg. per day.[1-6]
- Prompt sodium excretion, with "a duration of at least 18 hours."[2]
- 30% **more** natriuresis than parenteral meralluride — 62% **more** than oral chlorothiazide.[2]
- Less potassium and bicarbonate excretion or pH change than with chlorothiazide or hydrochlorothiazide.[2]
- "No significant serum electrolyte changes."[2]
- Continued effectiveness with prolonged use.[1,2,4,5,6]
- Well tolerated.[1-6]

INDICATIONS:
SALURON is indicated for the treatment of salt and water retention associated with cardiac or renal insufficiency, hepatic cirrhosis, pregnancy, premenstrual syndrome, or steroid administration.

DOSAGE:
Usual dose one tablet on arising. Some patients respond to as little as 25 mg. per day; but doses as high as 400 mg. may be used. Ideally, the dosage should be adjusted to the individual patient's need, so that effective diuresis is produced with the minimal dose.

SUPPLY:
Scored 50 mg. tablets of sustained-action hydroflumethiazide; bottles of 50.

Comprehensive information on administration, dosage and precautions on package insert, or available on request.

REFERENCES:

1. Dube, A. C., Van Duyn County Hospital, Onondaga, N. Y.: Personal communication.
2. Ford, R. V., Nickell, J., and Dennis, E. W.: Ant. Med. & Clin. Ther. 6:461, 1959.
3. Fuchs, M., Hahnemann Medical College, Philadelphia: Personal communication.
4. Hudson, R., Meyer Memorial Hospital, Buffalo, N. Y.: Personal communication.
5. Meilman, E., Long Island Jewish Hospital, New Hyde Park, N. Y.: Personal communication.
6. Yu, Paul, University of Rochester Medical School, Rochester, N. Y.: Personal communication.

Bristol LABORATORIES INC., SYRACUSE, NEW YORK

for dry, red, scaly, cracked, soap-abused hands

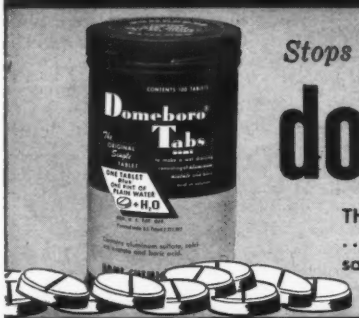
acid-mantle®

CREME pH 4.2 – LOTION pH 4.5 DOME

The normal, protective acid mantle of the skin, which has been removed by washing with soap and detergents, is instantly restored and maintained by ACID MANTLE Creme and Lotion, and normal physiological function and appearance return to the skin.

Creme in 1 oz. tubes, 4 oz., 1 lb. and 5 lb. jars. Lotion in 4 oz. squeeze bottles, 1 pint, and ½ gallon

Sig.: Apply after wet work and after washing hands. Samples and literature on request.



Stops the Flame of Skin Inflammation . . .

domeboro® tabs pH 4.2

DOME

THE MODERN BUROW'S SOLUTION used all over the world . . . for contact dermatitis due to alkalis, chemicals, oils, soaps, plastics, etc. Also in powder packets.

DOME CHEMICALS INC.

NEW YORK 23 • LOS ANGELES 46
In Canada: 2765 Bates Rd., Montreal

CHELATED IRON FOR MORE EFFICIENT ORAL THERAPY

■ outstandingly free from g.i. irritation ■ does not stain teeth [when given as a liquid] ■ can be taken any time – between meals without irritation, or at mealtime without impaired utilization ■ compatible with ulcer medication, and does not cause added irritation ■ safest iron to have in the home because of chelate-controlled absorption ■ and – clinically confirmed as an effective hematinic [Franklin et al.: J.A.M.A. 166:1685, 1958]

CHĒL-IRON
Brand of iron Choline Citrate* Trademark

CHELATED the new way to give oral iron

Tablets — 1 tablet t.i.d. furnishes 120 mg. iron
Pediatric Drops — 1 cc. furnishes 25 mg. iron
Liquid — 1 tsp. (5 cc.) furnishes 50 mg. iron
also: CHĒL-IRON PLUS Tablets — chelated iron plus B_{12}, folic acid, other B vitamins, and C.

PDR PAGE 681

Kinney® KINNEY & COMPANY, INC. • COLUMBUS, INDIANA

"Chelate" describes a chemical structure in which metallic ions are "encircled" and their physicochemical properties thereby altered. **Chelated iron** (as iron choline citrate*) is unusually soluble; nonionizable; not precipitated by variations in g.i. tract pH, protein, phosphate, or alkali; yet is readily available for hemopoiesis on physiologic demand.

*U. S. PAT. 2,673,831

hears the complaint of an aide about the boil on her back. The nurse who knows her stuff—and her "staph"—will report these observations immediately to the proper person, usually the doctor. In addition, she will throw up a barricade of protection by instituting necessary isolation technique, moving the patient away from others, or sending the complaining employee off duty and insisting that she have medical attention. These are immediate steps in starting the research wheels rolling.

Cultures are requested; the nurse or her ward personnel help procure and take them to the laboratory. Reports come back and action is geared to their content. Nursing must be aware of the importance of mass studies in determining the origin and extent of resistant infection among patients and personnel, because on the results of these studies depend the changes of techniques or procedures which control the existence of future outbreaks. In lending her moral and physical assistance to research studies, the progressive nurse plays a vital role in finding answers to the questions epidemiologists must explore in investigating infectious diseases. These questions include:

Where did the infection come from?
How did it get here?
Where else might it have gone?
Where might it go from here?
What can be learned from this situation for use in the future?

It can be readily seen that the alert nurse's potential aid in this detective type of activity is limitless. Clues which might never be found by anyone else are picked up and passed on if the nursing personnel close to the patient have an understanding of the nature and importance of the problem.

Once the nurse has acquired some of these facts, she can then pinpoint her responsibility to better advantage. While it is not possible to itemize these in terms of priority or of importance, the following responsibilities are undoubtedly those which assume major importance in this effort to prevent transmission of the germs from reservoirs of infection to new hosts:

Establish and maintain improved techniques in the general ward nursing areas and in the special services of the hospital.

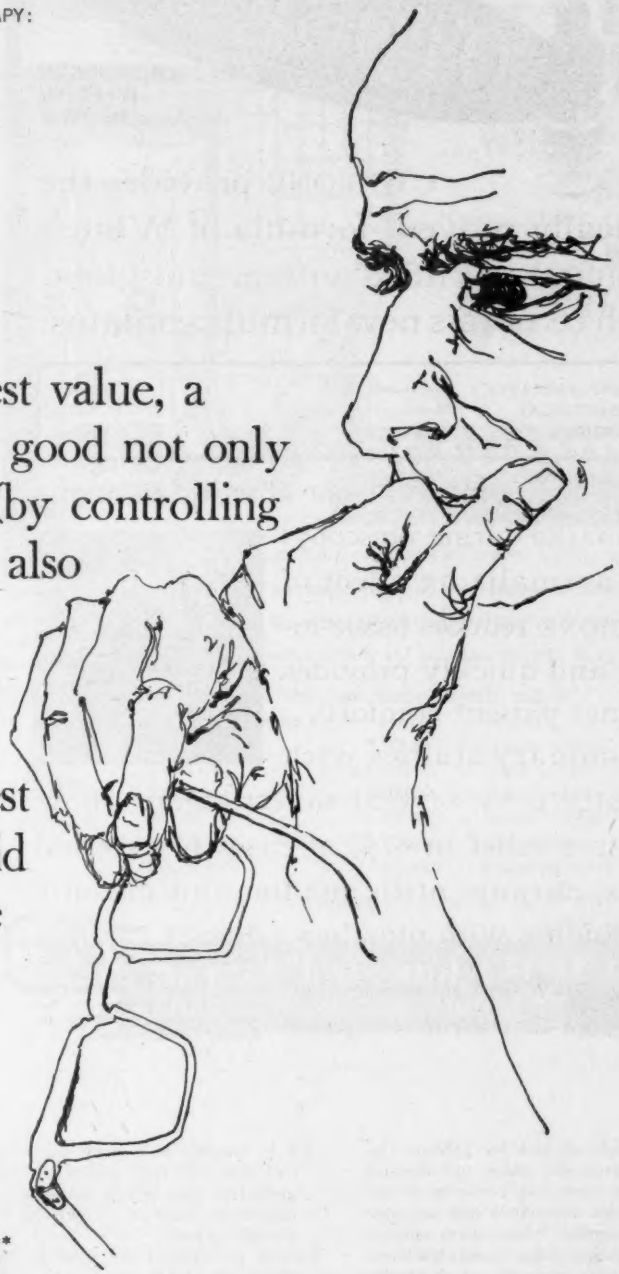
Such techniques in the general ward nursing areas will be concerned with:

Adequate and proper hand washing.
Disposal of contaminated dressings.
Intelligent handling of linen—labelling contaminated linen for handling purposes.
Adequate and proper clearing of patients' unit and of supplies and equipment used in patient care—(concurrent cleaning as well as terminal).
Awareness of proper housekeeping and reporting of situations which contribute to the increased infections.
Use of strict surgical aseptic technique in changing of dressings and bladder catheterization.
Assignment of patient rooms and beds. (Avoid placing elective surgical with infectious post-operative patients.)

Techniques specific to special services in the hospital include:

Frequent checking of all hospital sterilized materials, dressings, linen packs, instruments, water, etc., to see that they are really sterile.
Strict attention to impeccable aseptic technique in surgical and delivery rooms.
Care that all materials entering the newborn and premature nurseries are immaculately clean, if not sterile.
Whether or not masks are used in nurseries, the staff should be as stable as possible. Ideally, the same nursing personnel should care for the infants all the time and these employees should not work in any other area.
Scrubbing techniques rely strongly on the mechanical action of the brush plus a hexachlorophene soap. The old 10-minute scrub, vigorously engaged in, has proven once more the most effective of all measures in hand and arm preparation for the operating and delivery rooms, and for the nursery.
Adequate skin preparation at site of incision.
See that the operating room is not

REFLECTION ON CORTICOTHERAPY:



To be of greatest value, a steroid must be good not only for the patient (by controlling symptoms), but also to the patient (by minimizing side effects).
To be of greatest value, the steroid should have the best ratio of desired effects to undesired effects:

Medrol*

the corticosteroid that hits the disease, but spares the patient

THE UPJOHN COMPANY
KALAMAZOO, MICHIGAN

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF. — METHYLPREDNISOLONE, UPJOHN

OTOBIONE provides the clinically proved* formula of White's OTOBIOTIC, fortified with prednisolone. Each cc. of this new formula contains:

ANTI-INFLAMMATORY	Prednisolone acetate	5 mg.
ANTI-BACTERIAL	Neomycin (from sulfate)	3.5 mg.
ANTI-FUNGAL	Sodium propionate	50 mg.

Physiologic pH! Will not obscure anatomic landmarks during otoscopy! The normalizing effect of OTOBIONE reduces tissue injury, and quickly provides optimal patient comfort... Preliminary studies with OTOBIONE by several investigators† show effective relief in 87% of cases of external otitis, chronic otitis media, and chronic mastoiditis with otorrhea.

White Laboratories, Inc.
Kenilworth, New Jersey

*Lawson, G. W.: Diffuse Otitis Externa and Its Effective Treatment, Postgrad. Med. 22:501, Nov., 1957.
†Daly, J. F.: Personal Communication. Yesner, B.: Personal Communication. McStravog, L.: Personal Communication. Rigual, R.: Personal Communication.

overpopulated, and that persons who must be in the room are dressed properly, including clean scrub-apparel, caps adequately and unglamorously applied, shoes worn only in the operating suite, double thickness sterile masks over nose and mouth, changed frequently. This is a joint responsibility of all nursing and medical personnel.

Restrict wearing of scrub-apparel to the operating or delivery suite.

Persons who accompany patients to the wards after surgery wear gowns which are discarded upon return to the operating suite. This is the responsibility of every hospital employee.

Supervisors carry little "beasties," too! It is amazing how many supervisors feel that the title carries a magic protective aura which automatically repels not only the employees, but also the germs.

Special precautions are used in handling and disinfecting instruments, furniture, linen, and room after a surgical case known to be infected with any organism.

Most important in consideration of technique is building up once more in all workers a healthy respect for micro-organisms and the potential hazard they present. No intelligent man casually exposes himself or others to the dangers of fire or flood, yet many of our intelligent hospital personnel bring disaster close to themselves and others every day by pooh-poohing principles of good technique and by being too busy to wash their hands between patients.

This leads to the next vital point—

Accept and carry out teaching responsibilities:

In relation to the employees: A formal program of education concerning cause of infections, spread, sources, prevention, etc., could be developed and geared to meet levels of various categories of personnel. The individual nurse may have a part in helping to develop such a program, or in participating in it. She very definitely has a responsibility for attending such programs and of assigning personnel under her supervision to attend. One responsibility in which so many nurses fail is that of follow-up of educational efforts. Any teaching program can be effective only insofar as it changes behavior, attitudes and insights. The nurse has a real value in finding out what the employee learned and of determining that he carries out in actual practice the information gained. Teaching is one of the primary functions of the nurse, but many nurses think of teaching as the formal classroom type and do not realize the value to be gained from *incidental* teaching in favorable situations. Certainly it can readily be seen that proper technique lends itself to this type of teaching.

Another area of instruction is that concerning the employee's health. The nurse is in a unique position to guide employees in this respect. It is not necessary here to go into the usual health measures; however, it must be noted that for control of infections the nurse must be aware of any indication of active infection in employees and should send them off duty. She also must develop in the employee an understanding of the importance of reporting infections.

In relation to the patients: No one in the hospital spends any more time with the patients than nursing personnel. Thus through continued association, patients can be taught good body hygiene, including hand washings. Of rather recent origin are the more formal patient teaching programs such as those for the cardiacs, diabetics, and tuberculous. Relatives, too, can be taught and are usually a very receptive group.

In summary, then, the nurse has a real responsibility in the control of infections through:

Developing her own awareness of the problem and what she can do about it.

Establishing and maintaining improved techniques.

Participating in research; *and*

Teaching—both patients and employees.

And this responsibility is in no way limited to the time when we are actively concerned with "staph!"

Is man becoming obsolete?*

David E. Price, M.D.†

In a recent television program, James Thurber, in his casual way, noted that we are now living on the brink of "was." This rather neatly sums up the growing public concern that, even if we escape destruction by war, something else, probably subtle, insidious, and gradual, may eventually cause us to become a "has been" species.

The rationale for such a view is not entirely unreasonable. The technological world man has created bombards us with countless products which combine within our bodies as well as in our environment to cause reactions that we as yet know almost nothing about.

Radiation is now perhaps the major current cause of concern. How much radiation will the infants of 1959 absorb in the course of their lives from food, water, air, medical and dental treatments, and occupational exposures? What effect will it have upon them and their descendants? At this stage, we just do not know, and unfortunately the mass investment in worry is probably greater than the investment in efforts to find out.

But radiation is only one aspect of man's changing environment. With the growth of chemical industry, organic materials of unknown toxicity are being introduced at an ever-accelerating pace. As Dr. William Shepard has observed: "Chemists can produce and put into use a dozen new products while we painstakingly lay out a 3-year research project to test the toxic qualities of one." If we live in the city, we wonder whether fumes from industry, some of them odorless and invisible, are poisoning our air. If we live in the country, we worry about the effects of the herbicides and pesticides which are applied to the land and then leach into the streams.

Water shortage increases the potential danger of the modern industrial environment. It is estimated that in only 20 more years our daily use of water will almost exactly equal our daily supply. And we recall that it was lack of water which caused the dissolution of the great civilizations of the Middle East.

In a way, we are modern Midases. Everything we touch and change adds to our wealth, yet in the process loses something of its intrinsic value.

Small wonder that we all live under the shadow of a haunting fear that something may corrupt the environment to the point where man joins the dinosaurs as an obsolete form of life. And what makes these thoughts all the more disturbing is the knowledge that our fate could perhaps be sealed 20 or more years before the development of symptoms.

Yet despite these ominous developments, there is an almost renaissancian buoyancy in our outlook as we probe outward far into space and inward to the microcosm of the living cell. Stronger than fear is the conviction that what may at times appear to be the shadow of extinction is in reality the darkness preceding the dawn of the greatest era of progress man has ever known.

NEW EMPHASIS ON INDUSTRIAL HYGIENE

Whether or not this proves to be true, industrial hygienists are in a peculiarly key position to predict, and in some measure to control, the nature of our future environment. Increasingly, the work environment will represent the world in miniature so that every advance in occupational health programs may contribute to advances in community health. Consequently, the problems of specific jobs have a wider significance than ever before. The day has passed when the industrial hygienist can discharge his duty by reducing the worker's exposure to concentrated toxic products. The industrial hygienist must now also be concerned about the gradual deterioration in health that may result from prolonged small-dose exposure to toxic materials. And since this is precisely the concern of those responsible for controlling the general community environ-

*Reprinted from *Public Health Reports*, August 1959.

†Dr. Price, Assistant Surgeon General, Public Health Service, is chief of the Bureau of State Services. This paper is based on a text given at the 21st annual meeting, American Conference of Governmental Industrial Hygienists, in Chicago, April 27, 1959.

Sanctorius on his steelyard chair in the act of weighing himself for a metabolism experiment

in obesity...

bring the

...MOOD UP

...WEIGHT DOWN

keep the

BLOOD PRESSURE LEVEL

with

QUADAMINE GRANUCAP®

Quadamine GRANUCAPS® provide uniform and sustained therapeutic response. No excitation or sedation. Elevates the mood, protects against nutritional deficiencies, promotes activity and depresses the urge to eat.

Each GRANUCAP® (Sustained release) capsule contains:

Dextro Amphetamine Sulfate	15 mg.	Vitamin C	30.0 mg.
Amobarbital	45 mg.	Ferrous Sulfate	20.0 mg.
Vitamin A	6,600 Units	Cobalt Sulfate	0.49 mg.
Vitamin D	400 Units	Copper Sulfate	2.8 mg.
Vitamin B-1	1.6 mg.	Sodium Molybdate	0.45 mg.
Vitamin B-2	2.5 mg.	Zinc Sulfate	3.9 mg.
Niacinamide	15.5 mg.	Potassium Iodide	0.13 mg.

REFER TO PDR

PAGE 826

Samples and information on request. Write or ask your TUTAG representative.

TUTAG

S. J. TUTAG and COMPANY

19180 Mt. Elliott Avenue, Detroit 34, Michigan

GERIACTIVE

A FULL RANGE OF DIETARY AND THERAPEUTIC SUPPORT FOR **OLDER PATIENTS**

B-COMPLEX VITAMINS Thiamine Mononitrate, 5 mg.; Riboflavin, 5 mg.; Pyridoxine Hydrochioride, 1 mg.; Nicotinamide, 20 mg.; Calcium Pantothenate, 5 mg.
OIL SOLUBLE VITAMINS Vitamin A, 1.5 mg.(5000 units); Vitamin D, 12.5 mcg.(500 units); Vitamin E, 10 Int. units
HEMATOPOIETIC FACTORS Vitamin B_{12}, with Intrinsic Factor Concentrate, ½ U.S.P. Unit (oral); Ferrous Sulfate, U.S.P. (Elemental Iron—15 mg) 75 mg.; Folic Acid, 0.25 mg.
CAPILLARY STABILITY Ascorbic Acid, 50 mg.; Quertine® (Quercetin, Abbott), 12.5 mg.
LIPOTROPIC FACTORS Betaine Hydrochloride, 50 mg.; Inositol, 50 mg.
ANTI-DEPRESSANT Desoxyn® (Methamphetamine Hydrochloride, Abbott), 1 mg.
HORMONES Sulestrex® (Piperazine Estrone Sulfate, Abbott), 0.3 mg.; Methyltestosterone, 2.5 mg.

ABBOTT

with filmtab® GERILETS®

GERIATRIC SUPPORTIVE FORMULA, ABBOTT

®FILMTAB • FILM-SEALED TABLETS, ABBOTT; U.S. PAT. NO. 2,661,095.

STREAMLINED INTO THE SMALLEST TABLET OF ITS KIND

when pregnancy is contraindicated...

Lorophyn®

SUPPOSITORIES

Their simplicity of use assures the high degree of patient cooperation which is essential to any program of conception control. Greaseless, odorless and deodorizing, LOROPHYN Suppositories melt within 15 minutes to form a tenacious spermicidal barrier which has proved highly efficacious in clinical studies.*

Stable in any climate, LOROPHYN Suppositories contain phenylmercuric acetate 0.02%, methylbenzethonium chloride (an effective deodorant) 0.2% and methylparaben in a water-dispersible base. Box of 12 hermetically sealed suppositories, 2 Gm. each.

Also available: LOROPHYN Jelly containing phenylmercuric acetate 0.05%, polyethylene glycol of mono-iso-octyl ether 0.3%, methylparaben 0.05% and sodium borate 3% in a special jelly base. Tube of 3¼ oz.

*Eastman, N. J., Seibels, R. E.: J. Am. M. Ass. 139:16, 1949. Eastman, N. J., South. M. J. 42:346, 1949.

EATON LABORATORIES, NORWICH, NEW YORK

ment, it is not surprising to find that many States and communities are calling upon their occupational health personnel to assume major responsibility for newly developing programs in community air pollution and radiological health.

At the same time, occupational health programs cannot be neglected, as these facts clearly show:

- The 484 professional personnel staffing the 76 occupational health agencies in 40 States can cover only 10 percent of the Nation's work force.
- More than half of the industrial plants in the United States do not have even the most rudimentary type of occupational health program.
- Only about one-third of the Nation's workers are employed in large plants which may be able to afford the full range of preventive health services which is recognized to be desirable for all workers.
- Longstanding occupational health problems, such as silicosis, which we know how to control, continue to affect thousands of workers.

With so much unfinished business in established programs, one may well wonder how to meet new demands without spreading efforts too thin.

This is a question which concerns us in the Public Health Service and this is why our occupational and environmental health programs are developing and expanding those services which will be most helpful to States in meeting added responsibilities.

AIR POLLUTION

The air pollution programs of the Public Health Service officially date from 1955 when the Federal Research and Technical Assistance Act authorized the Service to help alleviate the problem of community air pollution by providing grants-in-aid and technical assistance to States and by conducting and supporting research and training programs in the air pollution field. Actually, our work on air pollution began with work on occupational health. Industrial hygienists have always recognized that pollution of the air in the working environment is a hazard.

Removing noxious contaminants from the plant to the outside air has been a popular solution to the industrial aspect of this problem, but we are increasingly aware that it is not a satisfactory solution either for the plant or for the community. Our dissatisfaction stems from a growing realization that diluted amounts of toxic materials breathed over a long period of time may have harmful effects as surely as more concentrated amounts breathed over a shorter time period.

We do not, however, have conclusive evidence that this is true. One of the greatest needs in the air pollution field is epidemiological studies that will help us to determine the effects of low-level exposures. Inplant studies as well as communitywide epidemiological studies could be most helpful. Through the air pollution research grants program, the Service hopes to encourage more epidemiological studies. Within the Service, we are comparing mortality and morbidity data with various indexes of air pollution and are finding that cities with heavy pollution loads tend to have higher than average death rates for certain diseases. This is a crude approach, however, and it will take a long time to study other factors which may be contributing to these findings and to determine the true significance of these observations.

The current community study in Nashville, Tenn., which involves both epidemiological observations and intensive sampling and analyses of air pollutants, is another research effort by the Public Health Service which seems promising.

Efforts to relate community air pollution to health may eventually have an effect on standards for the quality of air in the work environment. By the same token, studies of low-level exposures in the work environment may accelerate discovery of valuable clues to the hazards of community air pollution.

Probably the most publicized project in the Service's air pollution research is the study of automobile exhaust gases

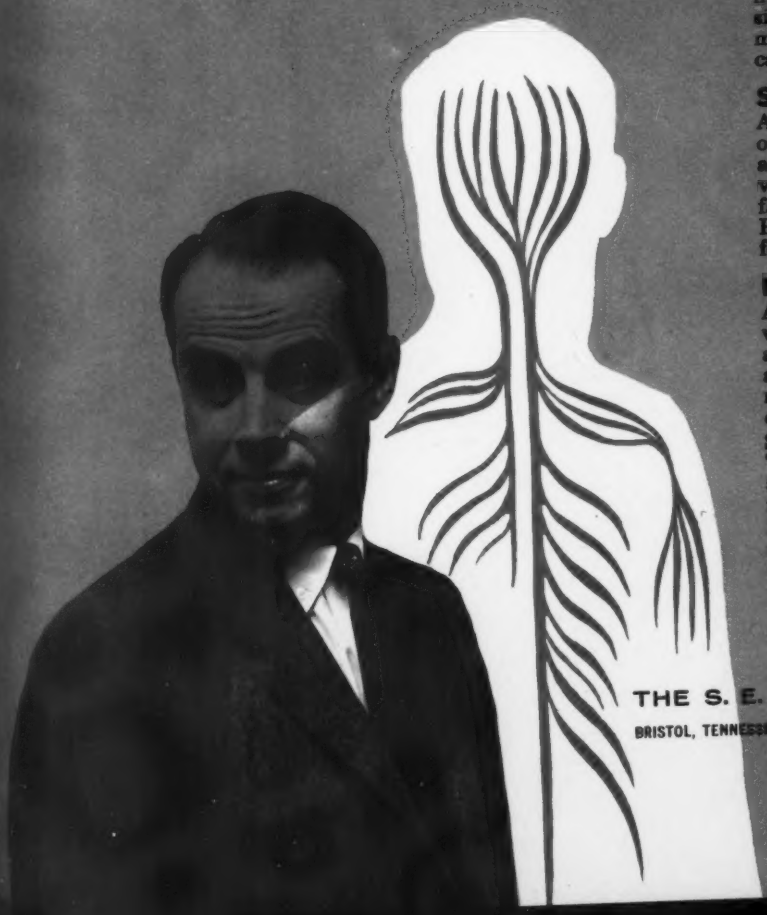
Standard preoperative procedure to control bleeding

Adrenosem®*

SALICYLATE

(Brand of carbazochrome salicylate)

OPERATING ROOM



Proven effective by over four years of clinical use, millions of doses

In hemostasis blood clotting is only one factor. Restoration of capillary integrity is of primary importance.[1-5] Adrenosem controls bleeding and oozing by decreasing excessive capillary permeability and promoting the retraction of severed capillary ends.[1-20]

Surgical Use

Adrenosem is recommended preoperatively where bleeding presents a problem. Minimal bleeding provides a clearer operative field and facilitates operative procedures.[9-20,22] Postoperatively, it lessens the need for transfused blood.[2,6,9-11,13,16,18,20,22]

Medical Use

Adrenosem is an effective hemostatic where vascular anomalies exist, such as telangiectasia, purpuras, epistaxis, and others.[1-4,6,9-11,21-23] At recommended dosage levels there are no contraindications.

Supplied: Ampuls, 1 cc., 5 mg.; Tablets, 1 and 2.5 mg.; Syrup, each 5 cc., 2.5 mg. Potency of all dosage forms is stated in terms of the active ingredient, adrenochrome monosemicarbazone.

Write for descriptive literature and dosage schedules

*U. S. Pat. 2581850, 2506294

THE S. E. MASSENGILL COMPANY

BRISTOL, TENNESSEE • NEW YORK • KANSAS CITY • SAN FRANCISCO

Adrenosem®

SALICYLATE

(Brand of carbazochrome salicylate)

effective in more than 200 clinical disorders

Adrenosem has proved effective, both prophylactically and therapeutically, in numerous operative procedures and pathological conditions. Following is a partial list of the many indications for Adrenosem.

tonsillectomy *adenoidectomy* **pharyngectomy** *mastoidectomy* **mastec**

toplasty **myectomy** *myoplasty* **septectomy** *turbinectomy* **rhinoplasty** *laryngectomy* **epiglottidec**

heotomy **bronchotomy** *tracheoplasty* **tracheostomy** *pneumonectomy* **pleurectomy** *pericardi*

rdiorrhaphy *pericardiorrhaphy* **splenectomy** *stomatoplasty* **cheiloplasty** *uvulectomy* **palatopl**

soplasty **esophagectomy** *gastrectomy* **enterotomy** *proctectomy* **proctopexy** *sphincterotomy* **hepa**

y *cholecystectomy* **herniorrhaphy** *ureterotomy* **prostatectomy** *vulvectomy* **hysterectomy** *oophor*

aract extraction *skin grafts* **scar excisions** *dermabrasion* **gastrointestinal bleeding** *pulm*

ding **epistaxis** *metrorrhagia* **menorrhagia** *cervical ooze* **antepartum and postpartum bleed**

atened abortion **capillary hemorrhage during hedulin, dicumerol or x-ray therapy** *hyperte*

rpuras *telangiectasia* **hemorrhagic retinitis** *subarachnoid hemorrhage* **ecchymosis**

THE S. E. MASSENGILL COMPANY

BRISTOL, TENNESSEE • NEW YORK • KANSAS CITY • SAN FRANCISCO

1. Erdman, J.: Arrest of Bleeding, Charles C Thomas, Springfield, Ill. (1934).
2. Swanson, G. and Erdman, J.: Adrenaline, Adrenalone, and Mean Bleeding Time, J. Physiol. 90:65 (1937).
3. Sheridan, D. A.: The Control of Bleeding, Am. J. Surg. 96:231 (Sept., 1953).
4. Fulton G. P., Lutz, L. E., Shulman, M. H. and Arendt, K. A.: Adrenalin Venom as a Test for Susceptibility to Potential Formation in the Hamster. Venoms Published by the Am. Assoc. for the Advancement of Science (1954).
5. Papp-Lichtenstern, J. R.: Passage of Medicaments Through Capillary Walls, Physiol. Rev. 33:387 (July, 1953).
6. Beazley, J. C.: The Use of the Systemic Hemostat Carbazochrome Salicylate, West. J. Surg., Obstet. and Gynec. 64:88 (Jan., 1956).
7. Klingsberg, B. C., Jr. and Young, H. E.: A Preliminary Report on Adrenosem Salicylate for Control of Hemorrhage, J. Calif. State Dental Assn. and Mar. State Dental Assn. 31:163 (May-June, 1955).
8. Moss, A. A.: Control of Hemorrhage in Dental Surgery, Dental Survey 32:1632 (Dec., 1956).
9. Poole, J. C.: Adrenosem in the Control of Hemorrhage from the Nose and Throat, A. M. A. Arch. of Otolaryng. 61:450 (Apr., 1955).
10. Poole, J. C.: Further Observations on the Use of Adrenosem Salicylate in the Control of Hemorrhage from the Nose and Throat, N. Car. Med. J. 17:98 (Mar., 1956).
11. Poole, J. C.: Control of Hemorrhage from the Nose and Throat, Med. Times 84:1238 (Oct., 1956).
12. Brode, H. A. and Chiavone, T. C.: A Clinical Evaluation of Adrenosem Salicylate, Ann. of Dentistry 15:56 (Sept., 1956).
13. Ovelman, Coppers B.: The Control of Post-operative Bleeding with Adrenosem, Laryngoscope 66:21 (Jan., 1956).
14. Perkins, E. E. L.: A Clinical Investigation of Adrenochrome Monoaminoguanidine Sodium Salicylate, Oral Surg., Oral Med., Oral Path. 10:250 (Mar., 1957).
15. Zobitz, C. B. and Seaverance, K. E.: Adrenosem for the Prevention of Bleeding in Tonsillectomy, Am. Practitioner and Digest of Treatment 8:365 (Mar., 1957).
16. Dennehy, P. J.: The Care of the Prostatic Cavity, S. African Med. J. 30:381 (Apr., 1956).
17. Bruner, M. S. and Lerner, S. S.: The Unsolved Problem of the Tonsils and Adenoids, The Med. Clinics of N. Amer. 40:1749 (Nov., 1956).
18. Orsec, E.: Medical Care of the Child Patient Before and After Adenotonsillectomy and Tonsillectomy, N. Y. State J. Med. 56:886 (Mar., 1956).
19. Riddle, A. C., Jr.: Adrenosem Salicylate: A Systemic Hemostatic, Oral Surg., Oral Med., Oral Path. 8:617 (June, 1955).
20. Roberts, E. W.: Observations on the Use of Adrenochrome in Dental Practice, Oral Surg., Oral Med., Oral Path. 10:52 (Jan., 1957).
21. Kent, N. R.: Stimulating Postoperative Bleeding, The Am. J. of Surgery 96:751 (Dec., 1958).
22. Brown, W. S.: Control of Bleeding After Dental Extraction, Northwest Med. 57:470 (Apr., 1958).
23. Coyle, J. E.: Analysis of Blood and Vascular Factors in the Prophylaxis of Tonsillectomy and Adenoid Hemorrhage, Laryngoscope 70:1809 (Oct., 1957).
24. Dimmette, J. E. and Terry, J. G.: Better Control of Bleeding in Vaginal Hysterectomy, Presented before the Texas State Med. Society, Surgical Section (Jan., 1956).
25. Keaney, A. H. and Mady, M. V.: Adrenosem (Carbazochrome) in Primary Glaucoma and Diabetic Retinopathy, A. M. A. Arch. of Ophth. 54:665 (Nov., 1955).
26. Proctor, D. F. and Douglass, C. C.: Bleeding Following Tonsil and Adenoid Operations, Trans. Amer. Acad. Ophthal., Otolaryngol. 60:992 (July-Aug., 1956).
27. Ryan, Allan J.: Control of Bleeding in Painful Telangiectasia, The Meriden Hosp. Bull. 7 (Jan., 1958).
28. White, B. D.: Gastrointestinal Bleeding as Seen by the Proctologist, J. A. M. A. 165: 1314 (Apr. 6, 1957).
29. Feinblatt, T. M., Feinblatt, H. M. and Ferguson, E. A.: Successful Non-Surgical Uses of Carbazochrome Salicylate, Amer. Pract. and Dig. of Treatment 9:1827 (Nov., 1958).

meet her greater needs for diet supplementation

...specify **Natalins® Comprehensive** / **Natalins® Basic**

Vitamins and minerals, Mead Johnson *Vitamins and minerals, Mead Johnson*

both extra-generous in iron, ascorbic acid and calcium

A study[1] of 461 infants, age 3 months to 1½ years, has shown a 26% greater incidence of anemia in second, third, and later children than in first-born children. "A plausible explanation . . . was that the successive siblings suffered increasingly severe iron deficiency because the mother's iron stores were depleted by successive pregnancies."

1. Guest, G. M., and Brown, E. W.: A.M.A. Am. J. Dis. Child. 93: 486 (May) 1957.

Natalins Comprehensive tablets supply 12 vitamins and minerals, and Natalins Basic tablets supply 4 vitamins and minerals. Both are formulated to meet the special needs of multiparas by supplying generous amounts of elemental iron (40 mg. per tablet), ascorbic acid (100 mg. per tablet) and calcium (250 mg. per tablet).

Convenient one-a-day tablet dosage.

Both formulations phosphorus-free.

Mead Johnson
Symbol of service in medicine

NA-11509M

minimal disturbance
of the patient's chemical and psychic balance...

still unsurpassed for total corticosteroid benefits

Arist

Substantiated by published reports of leading clinicians:

- **effective control** of allergic and inflammatory symptoms[1-20]
- **minimal disturbance** of the patient's chemical and psychic balance[1, 4, 5, 8-19]

tocort®

Triamcinolone LEDERLE

At anti-inflammatory and antiallergic levels ARISTOCORT means:

- **freedom from salt and water retention**
- **virtual freedom from potassium depletion**
- **negligible calcium depletion**
- **euphoria and depression rare**
- **no voracious appetite—no excessive weight gain**
- **low incidence of peptic ulcer**
- **low incidence of osteoporosis with compression fracture**

Indications: rheumatoid arthritis; arthritis; respiratory allergies; allergic and inflammatory dermatoses; disseminated lupus erythematosus; nephrotic syndrome; lymphomas and leukemias.
Precautions: With ARISTOCORT all traditional precautions to corticosteroid therapy should be observed. Dosage should always be carefully adjusted to the smallest amount which will suppress symptoms. After patients have been on steroids for prolonged periods, discontinuance must be carried out gradually.
Supplied: Scored tablets of 1 mg. (yellow); 2 mg. (pink); 4 mg. (white); 16 mg. (white).
Diacetate Parenteral (for intra-articular and intrasynovial injection). Vials of 5 cc. (25 mg./cc.).

References: 1. Feinberg, S.M., Feinberg, A.R., and Fisherman, E.W.: *J.A.M.A.* 167:58 (May 3) 1958. 2. Epstein, J.I. and Sherwood, H.: *Connecticut Med.* 22:822 (Dec.) 1958. 3. Friedlaender, S. and Friedlaender, A.S.: *Antibiotic Med. & Clin. Ther.* 5:315 (May) 1958. 4. Segal, M.S. and Duvenci, J.: *Bull. Tufts North East M. Center* 4:71 (April-June) 1958. 5. Segal, M.S.: Report to the A.M.A. Council on Drugs, *J.A.M.A.* 169:1063 (March 7) 1958. 6. Sherwood, H. and Cooke, R.A.: *J. Allergy* 28:97 (Mar.) 1958. 7. Duke, C.J. and Oviedo, R.: *Antibiotic Med. & Clin. Ther.* 5:710 (Dec.) 1958. 8. McGavack, T.H.: *Clin. Med.* (June) 1958. 9. Freyberg, R.H.; Berntsen, C.A., and Hellman, L.: *Arthritis and Rheumatism* 1:215 (June) 1958. 10. Hartung, E.F.: *J.A.M.A.* 167:973 (June 21) 1958. 11. Hartung, E.F.: *J. Florida Acad. Gen. Pract.* 8:18, 1958. 12. Zuckner, J.; Ramsey, R.H.; Caciolo, C., and Gantner, G.E.: *Ann. Rheum. Dis.* 17:398 (Dec.) 1958. 13. Appel, B.; Tye, M.J., and Leibsohn, E.: *Antibiotic Med. & Clin. Ther.* 5:716 (Dec.) 1958. 14. Kalz, F.: *Canad. M.A.J.* 79:400 (Sept.) 1958. 15. Mullins, J.F., and Wilson, C.J.: *Texas State J. Med.* 54:648 (Sept.) 1958. 16. Shelley, W.B.; Harun, J.S., and Pillsbury, D.M.: *J.A.M.A.* 167:959 (June 21) 1958. 17. DuBois, E.F.: *J.A.M.A.* 167:1590 (July 26) 1958. 18. McGavack, T.H.; Kao, K.T.; Leake, D.A.; Bauer, H.G., and Berger, H.E.: *Am. J. Med. Sc.* 236:720 (Dec.) 1958. 19. Council on Drugs: *J.A.M.A.* 169:257 (Jan. 17) 1959. 20. Rein, C.R.; Fleischmajer, R., and Rosenthal, A.R.: *J.A.M.A.* 165:1821 (Dec. 7) 1957.

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

BUTIBEL®

antispasmodic-sedative

puts the "jumpy," nervous g. i. tract back on schedule—with its regulative antispasmodic-sedative action.

BUTIBEL brings relief through the non-cumulative sedation of 15 mg. BUTISOL Sodium® butabarbital sodium combined with the antispasmodic action of natural extract of belladonna 15 mg. (per tablet or 5 cc.)—each ingredient having approximately the same duration of action.

BUTIBEL Tablets • Elixir • Prestabs® Butibel R-A
(Repeat Action Tablets)

McNEIL **McNeil Laboratories, Inc.**
Philadelphia 32, Pa.

which is now being initiated at the Robert A. Taft Sanitary Engineering Center in Cincinnati. For this study, we are reproducing solar irradiation effects on diluted automobile exhaust gases and will expose both plants and animals to this environment. This is one of the most comprehensive studies of the automobile exhaust problem that has ever been attempted. Since many of the substances contained in automobile exhaust gases may also be emitted during metal cleaning operations, drycleaning, printing, and the manufacture of plastic, rubber, and other products, the yield in knowledge may be invaluable in controlling industrial health hazards.

Of more immediate significance is the training program. Since 1955, when the air pollution training program started, from 7 to 10 specialized courses, each lasting 1 or 2 weeks, have been given annually by the Public Health Service. More than 2,000 persons, chiefly engineers and chemists, have taken these courses. Most of them have been from public agencies, but a number have also come from private industry; in fact, last year one-third were from industry. The courses were originally given only at the Sanitary Engineering Center in Cincinnati, but for the past 2 years they have also been given in various other parts of the country.

There has been a growth in the number of colleges and universities establishing or strengthening air pollution courses. The Public Health Service has awarded 21 traineeships to students taking full-time graduate-level air pollution training and has awarded grants to 10 universities for graduate-level air pollution curriculums. This financial support for training, although relatively small, has given impetus to the whole training movement and, at present, 14 universities offer graduate courses for advanced degrees in subjects related to air pollution.

Through the Public Health Service alone, there are now three immediate sources of help.

First, a staff of specialists, physicians, engineers, chemists, and others who comprise our total air pollution program are available as consultants on new or unusual problems. We recognize that it is uneconomical for States and communities to employ regularly persons whose highly specialized skills would rarely be needed, but there is enough demand for such specialists to warrant the development of a central staff available wherever and whenever the need arises. Consequently, for the past several years, we have been recruiting such a group of specialists. They work with our regional consultants in meeting special needs.

Second, the trainees who attend Public Health Service courses and seminars form a reservoir of personnel available to State and local agencies.

Third, existing staffs from these agencies can increase their competency in the air pollution field by attending Public Health Service courses and seminars.

The National Conference on Air Pollution which met last November focused nationwide attention on the air pollution problem and I believe has stimulated industries and various other nongovernmental agencies to step up their activities in research, training, and control. Within government, the conference gave impetus to efforts to extend the Federal Research and Technical Assistance Act beyond its expiration date of 1960 and thus assure continued Federal assistance in grants to States, research, training, demonstrations, consultation, and other technical aid.

The proceedings of the conference constitute an up-to-date reference book since it reports in full the papers given by some 90 authorities in industry, government, and other organizations, together with detailed discussion of papers by persons with varying viewpoints.

RADIOLOGICAL HEALTH

The radiological health program of the Public Health Service has also been expanding rapidly and should become an increasingly valuable source of help in dealing with occupational health and even broader problems of radiation. A special Division of Radiological Health was established last year and is staffed with specialists in both medical and engineering aspects.

Like the air pollution program, the radiological health program conducts and supports research, carries on a training program with courses at the Sanitary Engineering Center and in other parts of the country, and provides consultation and technical assistance to States and

communities upon request. Also like air pollution, the program, despite rapid expansion, still lacks sufficient staff and other resources to give as much help as one might wish.

Even if one considers only the occupational aspect of radiological health, its scope and predictable growth are truly formidable:

- It is estimated that 175,000 persons are currently employed in atomic energy industry. Thousands of other workers are engaged in operations involving the use of X-rays and radioactive substances.
- Two thousand hospitals and other institutions are licensed to use radioisotopes for medical purposes.
- A study underway by the occupational health program of the Public Health Service indicates that in at least one industry, uranium mining, the protections now available to workers are not yet adequate. About 64 percent of the miners in the Colorado plateau area, where most uranium mining is done, were found to be exposed to dangerously excessive concentrations, at least fivefold in excess of the desirable working standard.

The rapid growth in the past few years in the number of workers dealing with radioactive materials is as nothing compared with the growth we shall see in the immediate years ahead. The tremendous task of learning more about the health hazards to the workers involved and of finding effective control measures must be shared by government at all levels and by industry.

Better application of existing knowledge, however, can accomplish much even now. We have recently had a dramatic demonstration of this among our own employees in Public Health Service hospitals. In July 1958, continuous film badge monitoring was initiated in most of the Public Health Service hospitals, outpatient clinics, and field medical units. More than 1,600 film badges have been worn for 1-month periods by personnel working in and around X-rays and other sources of radiation. Analysis of the film badge reports for August 1958-January 1959 indicates a progressive decrease in the number of badges which exceeded an exposure of 30 milliroentgens per week. This exposure is the practical maximum exposure which need not be exceeded by hospital personnel taking necessary precautions. Using this limit, 6.5 percent of the film badge wearers were over-exposed the first 2 months and only 0.5 percent in the last 2 months, or a decrease from 31 to 3 needlessly large exposures.

Similar episodes could no doubt be recounted, for almost invariably a real drive to reduce radiation exposure of workers produces impressive results.

We are happy, therefore, to note that the States are exhibiting an increasing awareness and interest in the public health problem of radiation exposure. This is denoted in the increasing number of requests for consultative and technical assistance in coping with radiation problems, ranging from specific technical questions to assistance in development of comprehensive programs in radiation protection. Consequently, the following activities have been initiated in response to such expressed needs:

- Assistance in the development, organization, and operation of State health agency radiation programs. Such assistance is being provided by both headquarters and regional consultants, and, in some instances, by the assignment of trained Division of Radiological Health personnel to States on a full-time basis.
- Consultation on State legislation and rules and regulations for the control of radiation hazards.
- Demonstration projects on public health methods for the reduction of radiation exposure to the public from clinical use of X-rays.
- Technical aid in surveys and monitoring programs designed to determine the amount and effect of radioactive contamination and the extent of radiation exposure to our population.
- Assistance in evaluating the adequacy of proposed radioactive waste treatment and disposal mechanism in reactor facilities and in radioisotopes usages.
- Provision of information to communities near the site of reactor operations including: advice on the protective measures to be employed in connection with site selection; the outlining of laboratory or other radiation measuring methods considered necessary to determine the amount of radioactive contamination or exposure to individuals; and the proper interpretation of the results and effective-

NEW rapid screening test for

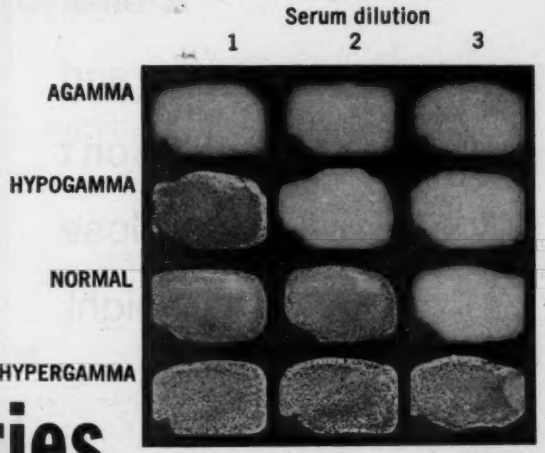
AGAMMA globulinemia

and other abnormal levels of serum gamma globulin

Hyland GG-TEST*

*Trade Mark of Hyland Laboratories

Hyland GG-TEST requires only one drop of patient's serum and is performed simply and quickly on a glass slide (reactions in less than 2 minutes). Test permits routine GG serum level determinations at low cost without overtaxing laboratory facilities. Test materials supplied in compact 40-test kits.



Hyland laboratories

4501 Colorado Blvd., Los Angeles 39, Calif. • 160 Lockwood Ave., Yonkers, N.Y.

Hyland

ness of various radiation protection methods or decontamination procedures.

The current program is in a transitional stage and, depending on the resources available to it, will develop in the coming months along lines best calculated to aid in the development of State activities.

Particularly significant to the future development of the radiological health program are the hearings which the Joint Committee on Atomic Energy is now conducting. The report of the Public Health Service National Advisory Committee on Radiation also suggests activity levels and assignment of responsibilities. Both documents deal extensively with the roles of Federal and State governments.

At the Joint Committee hearings 2 years ago, Merril Eisenbud, manager of the New York operations office of the Atomic Energy Commission, pointed out that one reason why so many unanswered questions about radiation effects exist is that we know so much, rather than so little. "It is simply characteristic of good research that answers beget questions," he said, pointing to the disparity in the funds invested in radiation studies as contrasted with air pollution and other areas. He concluded that if full information about organic chemicals and heavy metals were available, we should be asking the biologists many of the same kind of questions we are asking them today in regard to radiation effects.

OCCUPATIONAL HEALTH PROGRAM ACTIVITIES

It is imperative that we learn more about the new products that are being introduced so rapidly into general daily use in homes, farms, and factories. We realize, however, that the sheer number of chemicals being introduced each year as industrial compounds or intermediates precludes comprehensive toxicological screening. We in the Public Health Service also recognize that our own research efforts in this area have not kept pace with the problem and its needs. It is our hope that the toxicological and other activities of the occupational health program can be strengthened. The National Health Forum at its meeting in Chicago, March 17-19, 1959, strongly underscored the need for expanded Federal participation in occupational health activities. It particularly stressed the need for more epidemiological studies.

We believe that a first step in protecting the growing numbers of workers exposed to industrial chemicals is basic research to develop more efficient methods of toxicological evaluation. One such need is for the development of adequate testing procedures which will permit prediction with greater accuracy of the effects of long-term exposures. Also needed is the development of diagnostic procedures which, when applied to man, will detect changes long before permanent change has occurred.

The occupational health program has recently begun experimental work in this field of preventive industrial toxicology. The research which resulted in the discovery that vanadium poisoning can be detected by changes in the fingernails long before any clinical symptoms appear is the first fruit of a program that we hope will yield many other equally valuable findings in the coming years.

Another specific activity that we would like to strengthen is the occupational health information exchange. We hope to develop it into a central source of information on the toxicity of chemical compounds, hazards associated with new processes, disease problems in industry, and control methods. The exchange was started rather recently on an experimental basis and meets a long-felt need.

Emphasis will also continue to be placed on field studies, which are indispensable to occupational health progress. At present, the occupational health program has several studies underway which concern large segments of the working population. One of these concerns the effects of industrial noise on hearing, an extremely serious problem intensified by increasing off-the-job background noises. Another study, being conducted jointly with the U.S. Bureau of Mines in the western metal mines, seeks to determine how and where silicosis may be occurring. This problem remains the most significant occupational disease in terms

"Doctor,
I eat like
a bird,
and
I still don't
lose
weight."

of disability and compensation. Still continuing is the long-term study of radiation effects in uranium mining, to which I referred previously. These are just a few of the field studies which we hope will increase in number and scope.

Everyone in occupational health feels most keenly the great need to improve and expand our mechanism for collecting and reporting information on the health status of workers. Employee health programs, with periodic appraisals of health status, can contribute greatly to such epidemiological research. This is one strong reason, among many others, why we must find ways to reach workers in small establishments with employee health programs.

BASIC APPROACHES

We need to develop a much larger amount of biological content in all programs that involve the environment. This can be done only if the engineer, the chemist, the biologist, the physician, and other specialists operate as a closely knit team.

Such teamwork is being fostered in every possible way within the Bureau of State Services. For example, in the Radiological Health Division, physicians and engineers develop policies and projects jointly. In the air pollution program, although organizationally separated, physicians and engineers share the same office quarters in Washington and work in the same laboratories in Cincinnati, with the end result that there is joint planning and operation.

To strengthen such coordination at the administrative level, Mark D. Hollis, formerly chief of the Division of Sanitary Engineering Services, has been recently appointed associate chief of the Bureau of State Services. With his assistance as a member of my immediate staff, we expect to achieve an even greater degree of integration in engineering and medical programs. We hope to improve steadily our ability to channel, through our regional offices, whatever combination of medical, engineering, or other specialized consultant services may be needed in developing local programs.

In considering needs for future activity in the fields of environmental health, attention should be given to the published Hearings of the House Subcommittee on Appropriations which were released April 24, 1959. At the request of Chairman Fogarty, Congressman from Rhode Island, Dr. Leroy E. Burney, Surgeon General of the Public Health Service, emphasized the needs in the years ahead:

"In the present stage of thinking, it would seem desirable to establish some centers where orientation would be to particular problems of man in his environment and where research and studies of a specific type of community or industry, or environmental contaminant or influence could be carried out. Within these centers, technical assistance could be made available and training could be given in support of the total public health effort of the various components of the Service and of the States. . . .

"Our planning for expansion of program and facilities at Cincinnati in sanitary engineering, air pollution, water pollution, occupational health, toxicology, and radiological health is quite advanced. We do not believe that all of the needs of the Service in these fields can be met at any one geographic site; nor that the total needs of the Nation should be met in Federal governmental facilities. It will therefore be prudent to plan for eventual development of a number of centers, utilizing, where feasible, established educational and research organizations."

Just as the team approach envisioned by Dr. Burney in this statement is the best way to study the complex problems of man and his environment so, I believe, the educational approach offers the best way of getting something done about them. The writing into law of maximum allowable concentrations and other criteria can some day be helpful, when we are confident what such criteria should be. But more necessary than legal criteria are the educational efforts which prompt labor, management, and the general public to take voluntarily those actions which will contribute to a healthier environment for all.

She's wrong, of course. And you know it. She not only eats three meals daily, but she also "snacks" from morning to night. One 'Spansule' capsule, taken in the morning, will curb her appetite all day long, preventing both between-meal nibbling and overeating at mealtimes. Furthermore, 'Dexamyl' provides a mood improvement that encourages patient cooperation and eases adjustment to the low-calorie diet.

DEXAMYL* —for most overweight patients

Tablets · Elixir · Spansule* sustained release capsules

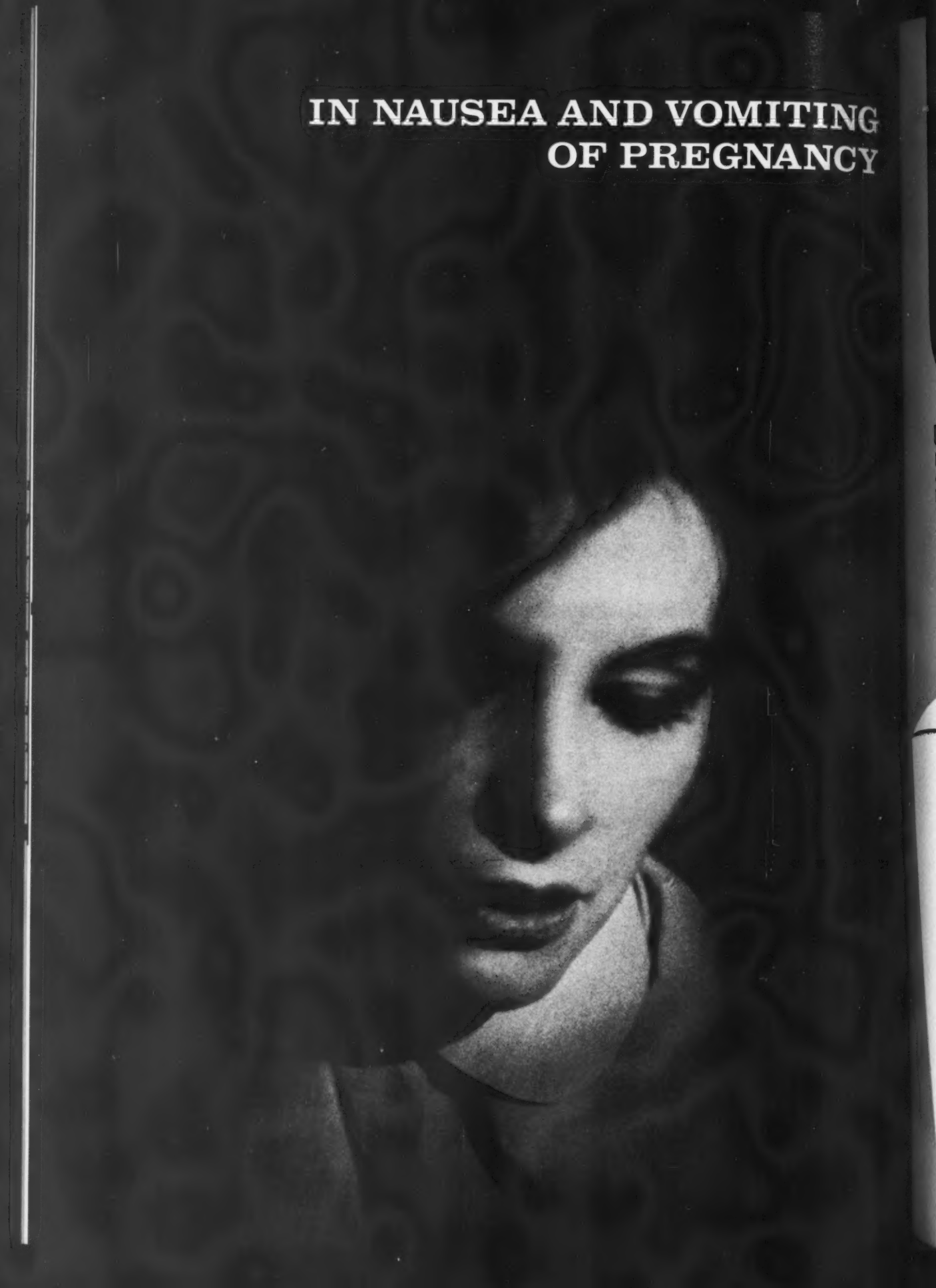
When your overweight patient is listless and lethargic—**DEXEDRINE†**

SKF **SMITH KLINE & FRENCH LABORATORIES, PHILADELPHIA**

*T.M. Reg. U.S. Pat. Off.

†T.M. Reg. U.S. Pat. Off. for dextro-amphetamine sulfate, S.K.F.

IN NAUSEA AND VOMITING OF PREGNANCY



USE

SPECIFIC
Avoids unnecessarily diffuse or diverse drug action; effective in economical once-a-day dosage

ESTABLISHED
6-year record of successful use in daily practice; consistently favorable reports[1-10]

UNCOMPLICATED
Has no known contraindications; free of hepatic, hypotensive, and hematologic hazards observed with phenothiazines

BONAMINE*

brand of meclizine hydrochloride

SUPPLIED:

BONINE Tablets, scored, 25 mg.

BONINE Chewing Tablets, mint-flavored, 25 mg.

BONINE Elixir, cherry-flavored, ideal for children, 12.5 mg. per teaspoonful (5 cc.).

DOSAGE: Adults, 25 to 50 mg. once a day. Children, usually half the adult dose.

BONINE REFERENCES:

1. Moyer, J. H.: M. Clin. North America, Mar., 1957, p. 405.
2. Seidner, H. M.: Illinois M. J. 109:20, 1956
3. Charles, C. M.: Geriatrics 11:110, 19[illegible]
4. Weil, L. L.: J. Flori[illegible]Gad. Ge[illegible] 4:9 No. 3, 1954
5. Kinney, [illegible] 53:128, 1956.
6. Se[illegible] nec. 9:586, 1957.
[illegible] and Moyer, J. H.: GP 14:124,
[illegible]chner, C. W., et al.: South. M. J. 1956.
[illegible] McL., and Bryans, C. I., Jr.: J.M.A. [illegible]46, 1956.
10. Repor[illegible]rmy, Navy, Air Force Motion Sickne[illegible] M.A. 160:755, 1956.

NEW NAME

BONAMINE IS NOW BONINE*

(BON'-EEN)

either way your patient gets the SAME superior product

Pfizer Science for the world's well-being™

PFIZER LABORATORIES Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York

*Trademark

Tobacco consumption and mortality from cancer and other diseases*

Harold F. Dorn, Ph.D.†

In 1954 the Public Health Service in cooperation with the Veterans Administration initiated a study of the causes of death among policyholders of U.S. Government Life Insurance. This insurance was available only to persons who served in the Armed Forces of the United States between 1917 and 1940. Although most of the policyholders were veterans of World War I, an appreciable number first served after that date. All except less than 0.5 percent of the policyholders included in this study were men.

*Reprinted from *Public Health Reports*, July 1959.

†Dr. Dorn is chief of the Biometrics Branch, Division of Research Services, National Institutes of Health, Public Health Service. This paper is an expanded version of one he presented before the Seventh International Cancer Congress in London, July 8, 1958, which will be published in the Acta, Unio Internationalis Contra Cancrum, during 1959.

The study was carried out in cooperation with the Field Investigations and Demonstrations Branch, National Cancer Institute, Dr. R. F. Kaiser, chief. Dr. W. S. Baum, Division of Indian Health, Public Health Service, assisted in planning and initiating the study.

The Veterans Administration, whose cooperation made the study possible, is nevertheless not responsible for, nor does it necessarily endorse, any of the findings or conclusions of this report.

METHOD OF STUDY

Beginning in January 1954, a questionnaire requesting information concerning the use of tobacco, usual occupation, and industry was mailed to each policyholder. Usable replies were received from 198,926 persons, or 68 percent of those included in the original mailing. A second questionnaire was mailed to nonrespondents beginning in January 1957. Usable replies were received from an additional 50,000 policyholders, making a total of approximately 249,000, or 85 percent of the number included in the study, for whom information concerning the use of tobacco, occupation, and residence is available. The nonrespondents have been retained in the study, and the same medical information is available for them as for the respondents.

Whenever a claim is filed for the payment of a policy, the Veterans Administration forwards a copy of the death notice, usually a copy of the official death certificate, to the Public Health Service. Additional medical information, including verification of the causes of death entered on the death certificate, the procedures used to establish these diagnoses, whether the deceased had cancer even though it was not considered to be an underlying or contributory cause of death, and the histological type of cancer, is requested from the physician who signed the death certificate or from the hospital where the death occurred.

Verification of the cause of death is not requested whenever the death occurs outside the United States, is due to an accident, or is certified by a coroner. Replies have been received to more than 99 percent of the letters of inquiry.

The underlying cause of death was changed for 6 percent of the deaths for which a comparison could be made between the entry on the official death certificate and the subsequent information received in response to letters of inquiry. Additional diseases contributory to death were reported for another 12 percent of the deaths, although the underlying cause was unchanged.

An autopsy had been made in nearly one-third (31 percent) of the deaths for which information concerning method of diagnosis was obtained. For about one-half of the deaths (47 percent) the diagnoses were established by exploratory surgery, endoscopy, radiography, or various laboratory tests. The diagnoses of the remaining one-fifth (22 percent) of

Definitions

SMOKING HISTORY

Persons were classified by smoking history in accordance with the following definitions.

Used tobacco: Persons who had smoked at least 5 to 10 packs of cigarettes or 50 to 75 cigars or 3 to 5 packages of pipe tobacco.

Smoked occasionally only: Persons who had never regularly smoked any form of tobacco but who had occasionally smoked one or more forms. Also included here were persons with unknown amount used either currently or in the past, provided that the maximum amount of known use was occasional only.

Regular smoker: Persons who at sometime during their lifetime had regularly smoked cigars, cigarettes, or pipe tobacco. These were further classified by the form of tobacco used and whether or not they were smoking at the start of the study in 1954.

Regular smoker, cigarettes only: Persons who had regularly smoked only cigarettes. They may have occasionally smoked cigars or a pipe, but they had never smoked either of these regularly.

Regular smoker, cigarette and cigar: Persons who had regularly smoked both cigarettes and cigars. They may have smoked a pipe occasionally but never regularly. Similar definitions were used for regular smokers of other combinations of tobacco.

Amount unknown: Persons who stated that they had smoked more than the minimum amount to qualify as a user of tobacco but who did not report the amount used either currently or in the past with sufficient accuracy to permit assignment to one of the groups of regular or occasional smokers.

Amount used: In this report, classification by amount of tobacco used is based on the current amount used at the time the questionnaire was filled out in 1954. Regular smokers of (*a*) cigarettes and cigars, (*b*) cigarettes and pipe, and (*c*) cigarettes, cigars, and pipe were classified by the current number of cigarettes smoked. Regular users of cigars and pipes were classified by the current number of cigars smoked.

CAUSE OF DEATH

The broad groups of causes of death used in this study including the following categories of the International Statistical Classification of Diseases, Injuries, and Causes of Death (seventh revision, 1955):

Cancer of lung: 162, 163.
Cancer except lung: 140-205, except 162, 163.
Respiratory diseases:
- Respiratory tuberculosis: 001-008.
- Asthma: 241.
- Influenza and pneumonia: 480-493.
- Bronchitis: 500-502.
- Emphysema without bronchitis: 527.1.
- Other respiratory diseases: 470-475; 527.0; 527.2; 510-526.

Accidents:
- Motor vehicle accidents: 810-835.
- Other accidents: 800-802; 840-962; 980-991.

Suicide: 970-979.
Cardiovascular diseases:
- Cerebral vascular lesions: 330-334.
- Rheumatic fever: 400-402.
- Chronic rheumatic heart disease: 410-416.
- Arteriosclerotic heart disease: 420.
- Nonrheumatic chronic endocarditis: 421-422.
- Other heart disease: 430-434.
- Hypertension with mention of heart disease: 440-443.
- Hypertension without mention of heart disease: 444-447.
- General arteriosclerosis: 450.
- Other circulatory system disease: 451-468.
- Chronic nephritis: 592-594.

Other diseases: Remaining categories.

ETHER-VAPOR, SUCTION UNIT

Complete

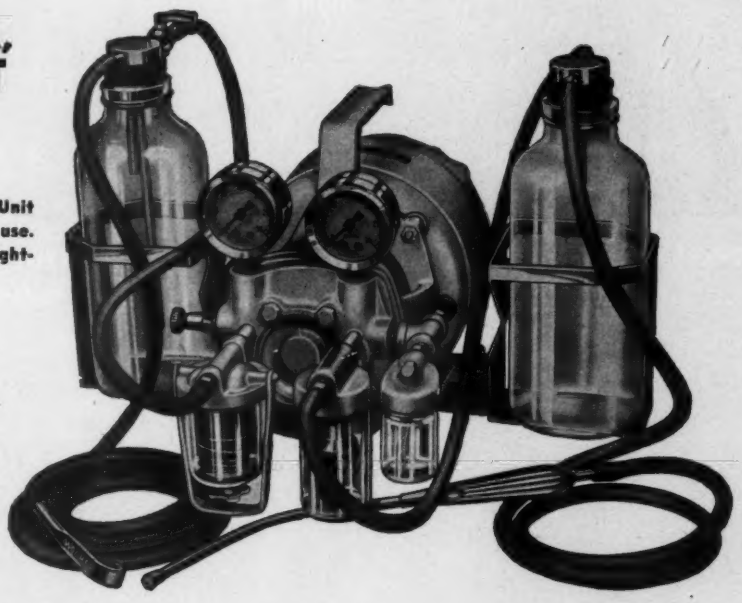
$109.75

Our "Southwind" Anesthesia Unit comes to you complete—ready to use. There is nothing else to buy. Lightweight, portable.

The 1/6 H.P. motor* and 4-blade rotary pump provide all the pressure and suction you'll ever need. Regulators, Gauges, Muffler, Filter, Automatic Oiler, Safety Trap, Ether Tube, Suction Tube and Rubber Tubing are all included. Motor and pump guaranteed for three years. For 115 V., A.C. 60 cy. only. Other currents slightly higher.

The "Southwind" is an exclusive Wocher product. You won't find a comparable unit anywhere else. The pump only, without suction and ether bottles and tubes, but with regulators, gauges, filter, oiler, etc., is available at **$79.50**

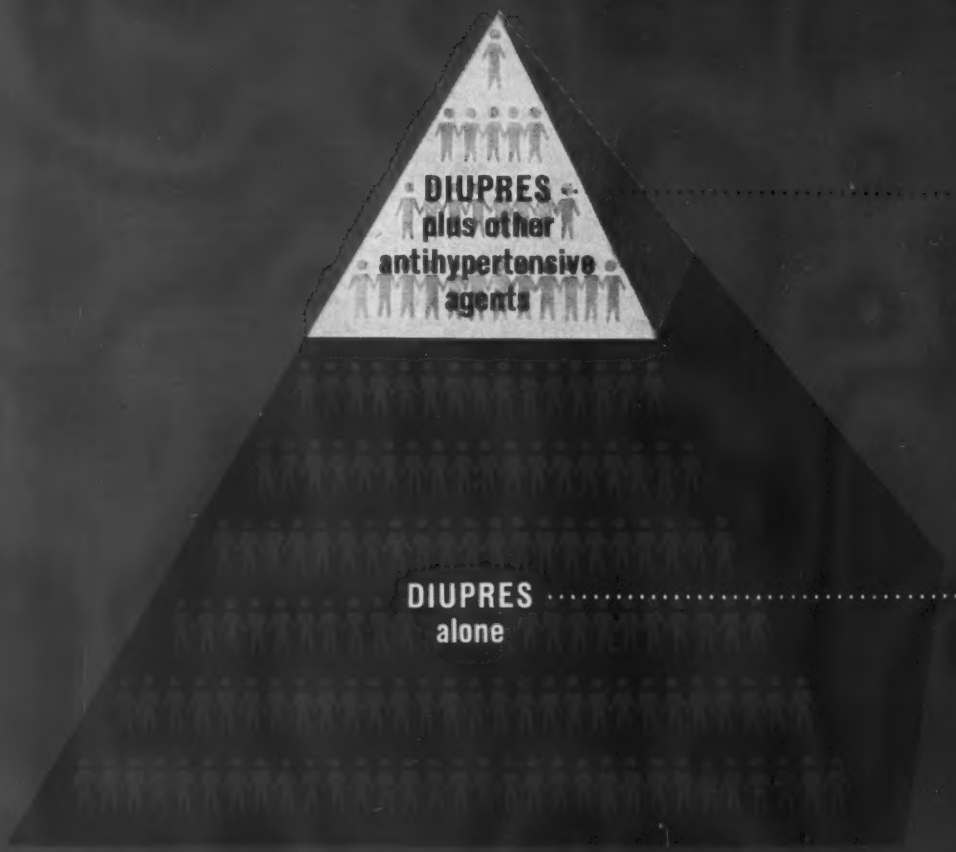
*Not explosion-proof



609 College Street, Cincinnati 2, Ohio

Wocher's

Branches in Dayton, Columbus



DIUPRES PROVIDES "BROAD-BASE" ANTIHYPERTENSIVE THERAPY

...is effective by itself in a majority of patients with mild or moderate hypertension, and even in many with severe hypertension

greatly improved and simplified management of hypertension

DIUPRES®

DIURIL® WITH RESERPINE

the first "wide-range" antihypertensive—effective in mild, moderate, and severe hypertension

- more hypertensives can be better controlled with **DIUPRES** alone than with any other agent...with greater simplicity and convenience, and with decreased side effects
- can be used as total therapy or primary therapy, adding other drugs if necessary
- in patients now treated with other drugs, can be used as replacement or adjunctive therapy
- should other drugs need to be added, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced
- organic changes of hypertension may be arrested and reversed... even anginal pain may be eliminated
- patient takes one tablet rather than two... dosage schedule is easy to follow
- economical

DIUPRES-500 500 mg. DIURIL (chlorothiazide), 0.125 mg. reserpine.
One tablet one to three times a day.

DIUPRES-250 250 mg. DIURIL (chlorothiazide), 0.125 mg. reserpine.
One tablet one to four times a day.

MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

® DIUPRES AND DIURIL (CHLOROTHIAZIDE) ARE TRADEMARKS OF MERCK & CO., INC.

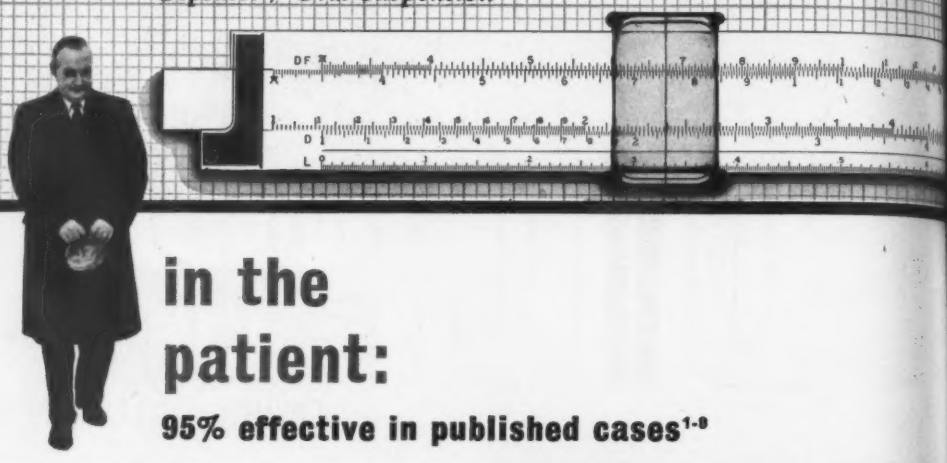
℞ Tao

PRONOUNCED TAY-O

(triacetyloleandomycin)

Capsules / Oral Suspension

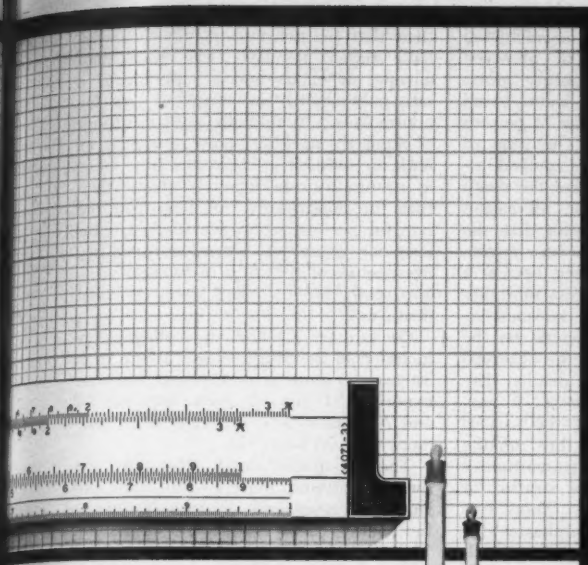
* *designed for superior control of common Gram-positive infections*



in the patient:

95% effective in published cases[1-9]

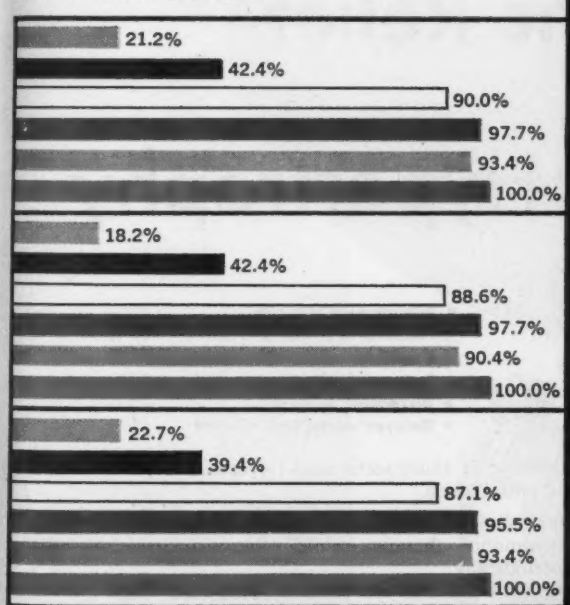
Conditions treated	No. of Patients	Cured	Improved	Failure
ALL INFECTIONS	**558**	**448**	**80**	**30**
Respiratory infections	**258**	**208**	**31**	**19**
Pharyngitis and/or tonsillitis	65	58	5	2
Pneumonia	90	66	17	7
Infectious asthma	44	38	—	6
Otitis media	31	29	2	—
Other respiratory (bronchitis, bronchiolitis, bronchiectasis, pneumonitis, laryngotracheitis, strep throat)	28	17	7	4
Skin and soft tissue infections	**230**	**181**	**38**	**1**
Infected wounds, incisions and lacerations	41	33	8	—
Abscesses	51	43	8	—
Furunculosis	58	51	6	1
Acne, pustular	43	28	15	—
Pyoderma	19	19	—	—
Other skin and soft tissue (infected burns, cellulitis, impetigo, ulcers, others)	18	17	1	—
Genitourinary infections	**28**	**19**	**3**	**6**
Acute pyelitis and cystitis	10	8	2	—
Urethritis with gonorrhea or cystitis	8	8	—	—
Pyelonephritis	4	1	—	3
Salpingitis	5	1	1	3
Pelvic inflammation with endometriosis	1	1	—	—
Miscellaneous (adenitis, enteritis, enterocolitis, subacute bacterial endocarditis, fever, hematoma, staphylococcus carriers, osteomyelitis, tenosynovitis, septic arthritis, acute bursitis, periarthritis)	**42**	**30**	**8**	**4**



in the laboratory:

over 90% effective against resistant staph

COMPARATIVE TESTS BY THREE METHODS (DISC, TUBE DILUTION, CYLINDER PLATE) ON 130 STAPHYLOCOCCI[9]



Antibiotic A 2-10 units
Antibiotic B 5-30 mcg.
Antibiotic C 5-30 mcg.
TAO 2-15 mcg.
Antibiotic D 2-15 mcg.
Antibiotic E 5-30 mcg.

Percentage of organisms inhibited by the range of concentrations listed for each antibiotic.

Other Tao advantages:

Rapidly absorbed—stable in gastric acid,[7] TAO needs no retarding protective coating

Low in toxicity—freedom from side effects in 96% of patients treated; cessation of therapy is rarely required

Highly palatable—"practically tasteless"[7] active ingredient in a pleasant cherry-flavored medium.

Dosage and Administration: Dosage varies according to the severity of the infection. **For adults,** the average dose is 250 mg. q.i.d.; to 500 mg. q.i.d. in more severe infections. **For children** 8 months to 8 years, a daily dose of approximately 30 mg./Kg. body weight in divided doses has been found effective. Since TAO is therapeutically stable in gastric acid, it may be administered without regard to meals.

Supplied: TAO Capsules—250 mg. and 125 mg., bottles of 60. TAO for Oral Suspension—1.5 Gm., 125 mg. per teaspoonful (5 cc.) when reconstituted; unusually palatable cherry flavor; 2 oz. bottle.

References: 1. Koch, R., and Asay, L. D.: J. Pediat., in press. 2. Leming, B. H., Jr., et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 3. Meilman, et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 4. Olansky, S., and McCormick, G. E., Jr.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 5. Shubin, H., et al.: Antibiotics Annual 1957-1958, New York, N. Y., Medical Encyclopedia, Inc., 1958, p. 679. 6. Isenberg, H., and Karelitz, S.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 7. Wennersten, J. R.: Antibiotic Med. & Clin. Therapy 5:527 (Aug.) 1958. 8. Kaplan, M. A., and Goldin, M.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 9. Truant, J. P.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958.

TAO dosage forms—for specific clinical situations

TAO Pediatric Drops

For children—flavorful, easy to administer.

Supplied: When reconstituted, 100 mg. per cc. Special calibrated droppers—5 drops (approx. 25 mg.) and 10 drops (approx. 50 mg.). 10 cc. bottle.

TAO-AC (TAO analgesic, antihistaminic compound)

To eradicate pain and physical discomfort in respiratory disorders.

Supplied: In bottles of 36 capsules.

TAOMID* (TAO with triple sulfas)

For dual control of Gram-positive and Gram-negative infections.

Supplied: Tablets, bottles of 60. Oral Suspension, bottles of 60 cc.

Intramuscular or Intravenous

For direct action—in clinical emergencies.

Supplied: In 10 cc. vials.

*TRADEMARK

ROERIG

New York 17, N.Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being

the deaths were based upon physical examination and clinical history.

BASIS OF THIS REPORT

This report is based on deaths occurring during the 2¾-year period July 1954-December 1956 among persons for whom information concerning use of tobacco was obtained prior to July 1954. Deaths during the first 6 months of 1954 have been excluded since the original questionnaire about the use of tobacco was mailed during this period. In addition to persons who died before they received a questionnaire, replies were not received from some persons who were seriously ill when the questionnaire was received; any deaths among these persons were assigned to the group of nonrespondents. Although the death rate of the entire group of policyholders was not changed by this exclusion, the rates for both the nonrespondents and the respondents were biased since a disproportionate number of deaths had to be assigned to the nonrespondent group. Inspection of the data revealed that the effect of this bias had largely disappeared by July 1954.

The following data are based on 478,952 person-years exposure, of which 89,774 were contributed by persons who had never smoked and 389,178 by persons who had smoked tobacco in some form during their lifetime.

Unless otherwise specified, the death rate for smokers is expressed as a ratio to that for persons who have never smoked. This mortality ratio is calculated by dividing the number of observed deaths for each smoking history group by the number of expected deaths based on the age-specific death rates of persons who have never smoked. The ratio of 1.32 for persons who have smoked tobacco at some time means that the death rate for these persons from all causes combined is 32 percent greater than the rate for persons who have never smoked.

The mortality ratio as used here is a measure of the relative excess mortality of smokers compared with nonsmokers. An equally valid measure would be the absolute difference between the observed and the expected number of deaths. The total number of excess deaths, if any, may be apportioned among the various individual causes of death, thus ranking the causes according to the proportion of the total excess number of deaths for which they are responsible. These two measures are designed to emphasize different aspects of the variation in mortality between two groups. The main interest in this paper is the relative difference in the death rate of smokers and nonsmokers; therefore, the mortality ratio will be used exclusively.

MORTALITY BY TYPE OF SMOKING

The largest increase in mortality among persons who have smoked is found for those who have regularly smoked only cigarettes. The death rate for these smokers is 58 percent greater than that for nonsmokers. Persons who have smoked regularly only cigars, only a pipe, or cigars and a pipe die at a rate only slightly in excess of that for nonsmokers. Individuals with a history of regularly smoking cigars or a pipe, or both, in addition to cigarettes are subject to a mortality rate definitely greater than that for nonsmokers but less than the rate for persons who have smoked regularly only cigarettes. Occasional smoking, irrespective of the form of tobacco used, apparently has no effect upon the total death rate.

On January 1, 1954, the policyholders included in this study varied in age from 30 years to more than 80 years. The vast majority, 84 percent, were between 50 and 70 years of age; only 2 percent were more than 70 years old.

The age-specific death rates show the same relationship between the death rate from all causes and smoking history as the average rates for all ages combined. The relative amount of the excess mortality of regular smokers in comparison with that of nonsmokers decreases after age 70, but this finding cannot be regarded as firmly established because of the small number of persons who were more than 70 years old at the start of the study.

MORTALITY OF EX-SMOKERS

Regular cigarette users who had stopped smoking prior to the start of the

Symptomatic Relief
In
Benign Prostatic Hypertrophy

As reported in the March 1958 issue of The Journal of The Maine Medical Association and in the February 1959 issue of Southwestern Medicine, a controlled clinical investigation of PROSTALL Capsules showed effective results as indicated at right.

- Enlargement reduced 92%
- Nocturia relieved 95%
- Urgent urination relieved..... 81%
- Frequency urination reduced.. 73%
- Discomfort relieved 71%
- Delayed micturition relieved... 70%

Prostall capsules contain 6 gr of a mixture of aminoacetic acid (glycine), glutamic acid and alanine.

The recommended dosage is 2 Prostall capsules three times a day for two weeks, thereafter, 1 capsule three times daily. Since nutritional factors require time, the regimen should be continued for a *minimum* of three months, for marked improvement. Some cases need continuous therapy, while others require it periodically.

Prostall capsules are ethically promoted. Supplied in bottles of 100 and 250 capsules.

Write for professional literature

METABOLIC PRODUCTS CORP.
LITTLE BUILDING • BOSTON 16, MASS.

modern physicians prefer

ISOLYTE®

ISOLYTE contains in each 100 cc: Sodium Acetate N.F. 0.64 Gm.*; Sodium Chloride U.S.P. 0.5 Gm.; Potassium Chloride U.S.P. 0.075 Gm.; Sodium Citrate U.S.P. 0.075 Gm.*; Calcium Chloride U.S.P. 0.035 Gm.; Magnesium Chloride Hexahydrate 0.031 Gm.
**Bicarbonate precursors.*

Isolyte has been proven effective with thousands of patients.

Isolyte . . . the balanced electrolyte solution for routine use.

Isolyte . . . a product of Baxter . . . pioneer in completely integrated parenteral systems.

BAXTER

leader in parenterals since 1928
. . . a symbol of quality in research, product and service.

DON BAXTER, INC. *Research and Production Laboratories* **GLENDALE, CALIFORNIA**

If you were going
to give or be given
an enema, you
would appreciate

SIGMOL®

the non-irritating,
expendable enema.

Sigmol is the
safe enema with the
longer flexible
tip nurses and
patients prefer.

Sigmol enemas
save expensive
preparation and
cleanup time and
improve patient
relations.

Join the march
to better, less
expensive patient
care with modern
expendables.

Specify SIGMOL
the finest.

Each 120 cc. enema contains:
Sorbitol Solution N.F.... 43 Gm.
Dioctyl Potassium
Sulfosuccinate... 0.12 Gm.

BAXTER

DON BAXTER, INC.
Research and Production Laboratories,
GLENDALE, CALIFORNIA

study in 1954 have a lower death rate than persons who continued to smoke. Nevertheless their death rate on the average still exceeds that for nonsmokers by 30 percent. The largest absolute decrease in the mortality ratio is found for ex-smokers who have regularly smoked cigarettes only; their mortality ratio is 1.39 compared with 1.65 for persons who were still smoking cigarettes.

The much higher mortality among men who have smoked regularly only cigarettes is emphasized by the fact that the mortality ratio for those who have stopped smoking, 1.39, is slightly greater than the ratio, 1.35, for persons who were continuing to smoke cigarettes in combination with cigars or a pipe. Part of the difference in the death rates for these two groups of cigarette smokers is accounted for by the fact that persons who regularly smoke cigars or a pipe as well as cigarettes smoke fewer cigarettes per day, on the average, than do persons who regularly smoke only cigarettes. After adjusting for differences in age and average number of cigarettes currently smoked, the death rate from all causes combined for cigarette-only smokers is 14 percent greater than that for persons who smoke cigars or a pipe in addition to cigarettes.

In contrast to cigarette smokers, ex-smokers of cigars and pipes are subject to a higher death rate than persons who continue to smoke these forms of tobacco. The death rate for those who were still regularly smoking cigars or a pipe in early 1954 does not differ significantly from that of persons who had never smoked, whereas the corresponding rate for ex-smokers ranged from 21 to 44 percent higher. This finding suggests that many of these ex-smokers may have stopped smoking because of ill health.

Whether or not this ill health may have been related to the use of tobacco is unknown.

MORTALITY BY CURRENT AMOUNT SMOKED

Two indexes of the amount of tobacco smoked are available for the persons included in this study: (*a*) the maximum amount ever regularly smoked, and (*b*) the amount currently smoked in early 1954. All of these had smoked regularly at some time, even those smoking only occasionally at the time they completed the questionnaire.

The excess mortality of cigarette smokers is directly related to the average daily number of cigarettes smoked. Those who smoke two packs or more a day have the highest death rate—a rate averaging nearly twice that for nonsmokers. The death rates by age and current amount smoked for regular cigarette users show the same direct relationship with the average daily number of cigarettes smoked as do the rates for all ages combined.

Only very heavy cigar or pipe smokers experience a higher mortality than nonsmokers. The death rates for the heaviest cigar or pipe smokers, those currently smoking 9 or more cigars or 20 or more pipefuls per day, are about the same as the rate of persons who smoke from one-half to one pack of cigarettes per day. Among these smokers the mortality ratio is significantly greater than one only for persons who regularly smoke cigars only and for the total of the three cigar- and pipe-smoking groups. These data lead to the conclusion that cigar or pipe smoking does not increase the total mortality rate unless large amounts of these forms of tobacco are consumed.

CLASSIFICATION OF DEATHS

Causes of death were classified according to the rules of the International Statistical Classification of Diseases, Injuries, and Causes of Death published by the World Health Organization. One underlying and a maximum of two contributory causes of death were coded. The selection of the underlying cause of death was based on the opinion of the deceased's physician except when it was obvious that the physician had misunderstood the intent of the question and had selected a terminal condition such as pulmonary failure or edema as the underlying cause. In addition, a separate code was provided for cases with cancer which the physician stated was not a contributory or underlying cause of death.

The mortality ratios for broad groups of causes are based on the underlying cause of death; hence there is only one cause for each death. The mortality ratios for the specific causes of death were computed from both underlying and contributory causes, and for cancer they also include cases with a cancer which the

PSORIASIS

distressing to the patient

perplexing to the doctor

RIASOL®

clinically tested ▸
ethically promoted ▸
safe and effective ▸
easy to use ▸
maximum assurance ▸
against recurrence and adverse reactions

WRITE for PROFESSIONAL SAMPLE and LITERATURE

AVAILABLE
at pharmacies or direct in 4 and 8 fluid ounces

COMPOSITION
RIASOL contains 0.45% Mercury chemically combined with soaps, 0.5% Phenol, 0.75% Cresol.

SHIELD LABORATORIES
Dept. OA-1059
12850 Mansfield Ave. • Detroit 27, Michigan

NOW

. . . a new way to relieve pain and stiffness in muscles and joints

INDICATED IN:

MUSCLE STIFFNESS

LUMBOSACRAL STRAIN

SACROILIAC STRAIN

WHIPLASH INJURY

BURSITIS

SPRAINS

TENOSYNOVITIS

FIBROSITIS

FIBROMYOSITIS

LOW BACK PAIN

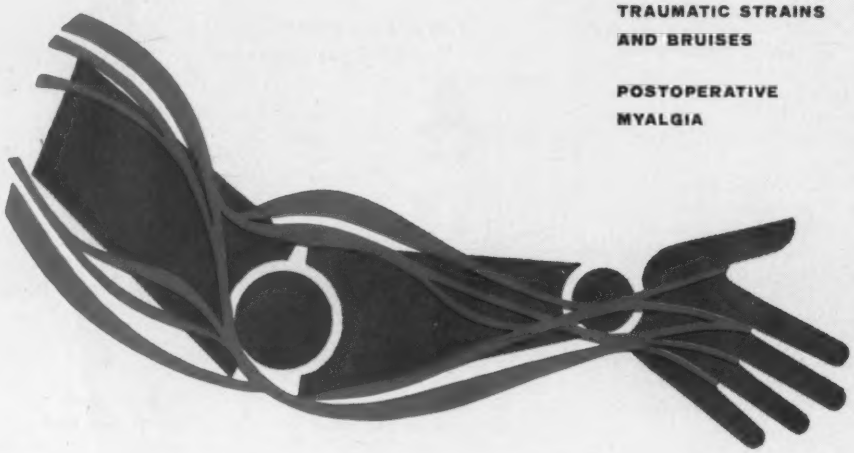
DISC SYNDROME

SPRAINED BACK

"TIGHT NECK"

TRAUMATIC STRAINS AND BRUISES

POSTOPERATIVE MYALGIA



■ Exhibits unusual analgesic properties, different from those of any other drug ■ Specific and superior in relief of SOMAtic pain ■ Modifies central perception of pain without abolishing natural defense reflexes ■ Relaxes abnormal tension of skeletal muscle

SOMA™

N-isopropyl-2-methyl-2-propyl-1, 3-propanediol dicarbamate

■ More specific than salicylates ■ Less drastic than steroids

■ More effective than muscle relaxants

SOMA has an unique analgesic action. It apparently modifies central pain perception without abolishing peripheral pain reflexes. SOMA is particularly effective in relieving joint pain. Patients say that they feel better and sleep better with SOMA than with any previously used analgesic, sedative or relaxant drug.
SOMA also relaxes muscle hypertonia, with its stresses on related joints, ligaments and skeletal structures.

ACTS FAST. Pain-relieving and relaxant effects start in 30 minutes and last 6 hours.

NOTABLY SAFE. Toxicity of SOMA is extremely low. No effects on liver, endocrine system, blood pressure, blood picture or urine have been reported. Some patients may become sleepy on high dosage.

EASY TO USE. Usual adult dose is one 350 mg. tablet 3 times daily and at bedtime.

SUPPLIED: Bottles of 50 white sugar-coated 350 mg. tablets.

Literature and samples on request.

WALLACE LABORATORIES, NEW BRUNSWICK, N. J.

UNBEATABLE COMBINATION!

Tycos® Aneroid with Velcro Cuff

HAND MODEL

You'll find the Tycos Hand Model Aneroid even handier with the Velcro cuff. You just press the two Nylon strips together, and when you've taken the blood pressure, simply pull them apart. No more bothersome hard-to-fit arms! Cuff conforms to any adult arm size or shape, will not slip or balloon when inflated. *Hand model is ideal for home and office use.* No. 5098-V Tycos Hand Aneroid with Velcro Cuff . . .

$49.50

POCKET MODEL

Risk of accidental dropping is reduced with Pocket Model which has gage attached to leather hanger . . . *makes it preferred in hospitals.* And durable Velcro fastener is good for years of use. In break-down tests, the cuff was opened and closed more than 128,000 times without loss of gripping strength. Hand and Pocket model both fit in the same roomy leather zipper case. No. 5090-V Tycos Pocket Aneroid with Velcro Cuff . . .

$46.50

The Velcro fastener consists of two Nylon strips, one covered with thousands of wooly loops, the other with microscopic hooks. When pressed together they interlace. Yet they *peel* apart easily. Taylor Instrument Companies, Rochester, New York and Toronto, Ontario.

Taylor Instruments **MEAN ACCURACY FIRST**

physician stated did not contribute to death. Examples of the latter are skin cancer or clinically quiescent cancer of the prostate discovered during autopsy. One hundred and seventeen of the persons who died had a cancer which was not considered one of the causes of death by the attending physician. Eight of these were cancer of the lung.

The selection of one of several coexisting diseases as the underlying cause of death frequently must be rather arbitrary. In studies of the etiology of disease the important question is whether or not a given disease has developed, not whether this disease has been designated by some method as the underlying cause of death. If a policyholder had both diabetes and cancer of the lung, he was counted twice, once in the group with diabetes and once in the group with cancer of the lung. Consequently, the sum of the numbers of observed deaths is greater than the number of persons who died.

The expected number of deaths on which the mortality ratios by cause are based were computed from the death rates for persons who had never smoked and those who had smoked only occasionally in order to have a statistically more stable basis of comparison. The only cause for which the death rates for these two groups differed appreciably is cancer of the lung. There were 10 deaths among persons with lung cancer from the 89,774 person-years exposure of the never-smoked group and 7 deaths from the 28,144 person-years exposure of persons who smoked only occasionally. The corresponding crude death rates were 11 and 25 per 100,000, but this difference is not statistically significant. For simplicity of expression the combined group will be referred to as having never smoked.

MORTALITY FROM BROAD CAUSE GROUPS

By far the greatest increase for smokers in the risk of developing a disease is that for lung cancer. For all persons who had ever smoked the observed number of cases of lung cancer was 312 compared with 52 expected, a mortality ratio of 6.0. However, the amount of the increased risk varies widely among the various groups of smokers, ranging from an excess of 33 percent for pipe smokers to 835 percent for cigarette-only smokers. The mortality ratio for none of the three cigar-pipe-smoking groups differs significantly from one; the ratio for the three combined, 1.60, is barely significant at the 5 percent level.

For no other disease does the excess mortality among smokers approach that for lung cancer. The next highest mortality ratio is for a group of respiratory diseases including pulmonary tuberculosis, asthma, bronchitis, emphysema, pneumonia, and pleurisy. Although these diseases are important causes of morbidity, they are numerically unimportant as primary, or underlying, causes of death; only 118 deaths among smokers and 24 deaths among nonsmokeres were due directly to one of this group of diseases.

The majority of these deaths were attributed to bronchitis, emphysema, pleurisy, empyema, fibrosis of the lung, and similar conditions.

An increased death rate from this group of respiratory diseases is found only among regular cigarette smokers, for whom the mortality ratio is 2.24. As for lung cancer, the highest ratio for respiratory diseases, 2.76, is for persons who smoke cigarettes only. Although the number of deaths among persons who regularly smoke only cigars or a pipe is small, there is no evidence that this group experiences a higher death rate from these respiratory diseases than do nonsmokers.

Nearly two-thirds of the deaths of persons who had used tobacco were attributed to diseases of the cardiovascular-renal system, including chronic nephritis, arteriosclerosis, hypertension, rheumatic heart disease, chronic endocarditis, and coronary occlusion, sclerosis, and thrombosis. The risk of dying from one or more of these diseases is 31 percent greater for regular smokers than for nonsmokers. Again, the risk is greater for regular cigarette users, especially those who have smoked only cigarettes, than it is for users of other forms of tobacco. There is no indication that regular cigar or pipe smokers experience a higher death rate than nonsmokers.

The mortality ratios for cancer other than cancer of the lung are similar in magnitude to those for cardiovascular diseases except that the ratios for cigar and pipe smokers are as high as those for cigarette smokers. The mortality from these forms of cancer will be discussed in more detail below.

Smokers have no greater risk of committing suicide or of being killed in an accident than do nonsmokers.

MORTALITY FROM SPECIFIC CAUSES

As was pointed out above, the death rates for each of the specific diseases include all patients with the disease at the time of death, irrespective of whether or not it was considered the underlying cause. However, a disease was not coded in the absence of evidence that it was clinically active.

Diseases with a mortality ratio greater than 2.0, signifying a death rate more than double that for nonsmokers, are bronchitis, emphysema, and allied respiratory diseases, cirrhosis of the liver, ulcer of the stomach or duodenum, cancer of the prostate, and cancer of the esophagus and buccal cavity. Several studies have reported that heavy smokers also tend to drink alcoholic liquors excessively so that the increased death rate from cirrhosis of the liver may reflect the effect of the consumption of alcohol rather than any effect of cigarette smoking. An increased mortality of cigarette smokers from the other diseases mentioned has been reported in other studies also. An explanation of the high mortality ratio for cancer of the prostate is not apparent.

The death rates from the principal cardiovascular diseases are from 33 percent to 63 percent greater for regular cigarette-only smokers than for nonsmokers. No increase in mortality exists for chronic rheumatic heart disease or for chronic nephritis.

The number of observed deaths for several diseases is not large enough to establish that the mortality ratio for heavy smokers is significantly greater or less than the ratio for light smokers. Among these diseases are cancer of the stomach and cancer of the kidney, for which the death rates are lower for heavy than for light smokers, and cancer of the bladder, cancer of the pancreas, and leukemia, for which the death rates are higher for heavy smokers than for light smokers.

But for cancer of the lung and cancer of the buccal cavity and esophagus, the death rate increases rapidly with an increase in the average daily number of cigarettes smoked. The death rate from lung cancer for men who regularly were smoking more than a pack of cigarettes a day is nearly 16 times the rate for nonsmokers. A similar, although numerically smaller, increase in the mortality ratio with an increase in the number of cigarettes smoked exists also for cancer of the buccal cavity (lip, tongue, mouth, pharynx) and esophagus.

1859—1959

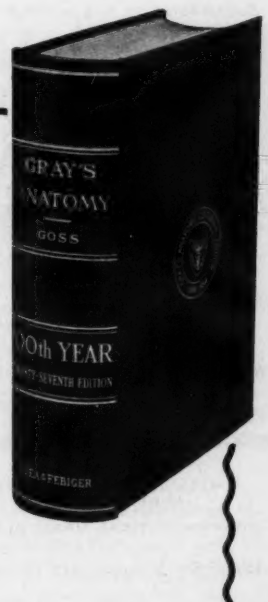
Now Ready—"The Bible of Medicine"

In celebration of the 100th anniversary of

GRAY'S ANATOMY

Lea & Febiger proudly presents the

AMERICAN CENTENNIAL (27th) EDITION



1458 pages, 7″ x 10″. 1174 illustrations, mostly in color. $17.50

LEA & FEBIGER

WASHINGTON SQUARE
PHILADELPHIA 6, PA.

Aspirin
SUPPRETTES®

Anti-Nausea
SUPPRETTES

**B & O*
SUPPRETTES
#15A #16A

Aquachloral
SUPPRETTES

Gentian Violet
SUPPRETTES

SUCCESSOR TO THE SUPPOSITORY

WEBSTER

REQUIRES NO REFRIGERATION
MAXIMUM DRUG ABSORPTION

Water Soluble | Ready Dispersal
Nonirritant | No Leakback

OUR 50th
ANNIVERSARY OF
PHARMACEUTICAL MANUFACTURE

Write for samples and literature.

The William A. Webster Co.
PHARMACEUTICAL MANUFACTURERS
MEMPHIS 3, TENNESSEE

* NARCOTIC ORDER REQUIRED

The leading cause of death of the policyholders included in this study is coronary heart disease. Although no difference was found in the death rates for moderate and heavy smokers, those smoking more than 10 cigarettes per day, these rates are greater than that for persons smoking less than 10 cigarettes per day. The difference, however, is considerably less than the corresponding difference for lung cancer. The death rates from hypertension, cerebral vascular lesions, chronic nephritis, and chronic rheumatic heart disease are no higher for heavy than for light smokers.

SUMMARY

1. This report summarizes the mortality experience of nearly 200,000 policyholders of U.S. Government life insurance from July 1954 through December 1956. All these policyholders served in the Armed Forces of the United States between 1917 and 1940.

2. The death rate from all causes for men who have used tobacco is 32 percent greater than that for men who have never smoked.

3. Men who have smoked regularly only cigarettes have the highest death rate of all groups of smokers, 58 percent greater than the rate for nonsmokers.

4. The death rate from all causes for men who have regularly smoked cigars or a pipe, or both, is not appreciably higher than that for nonsmokers.

5. Regular cigarette smokers who had stopped smoking cigarettes before the study began in 1954 have a lower mortality rate than those who continued to smoke. However, the rate for the ex-smokers still is 31 percent greater than that of nonsmokers.

6. The excess mortality of regular cigarette smokers is greater for heavy smokers than for light smokers. Only the heaviest users of cigars and pipe tobacco experience a significant increase in total mortality over that of men who have never smoked.

7. The greatest increase for smokers in the risk of developing a disease is for cancer of the lung. The mortality ratio for regular smokers of cigarettes only is 9.85, or about 10 times that for nonsmokers. The death rate for men smoking more than a pack of cigarettes a day is 16 times that of nonsmokers.

8. Regular users of cigars or a pipe, or both, have an increased mortality rate for cancer of the lung as well as for all forms of cancer as a group, but this increase is much less than that for cigarette smokers.

9. Regular cigarette smokers are subject also to an increased risk of dying from cardiovascular disease, from certain respiratory diseases such as bronchitis, pleurisy, and emphysema, from ulcers of the stomach and duodenum, and from cirrhosis of the liver.

10. The death rate from coronary heart disease among regular users of cigarettes only is 63 percent higher than the rate for nonsmokers.

11. The leading cause of death among the policyholders is coronary heart disease. Forty-four percent of the number of observed deaths and 45 percent of the number of excess deaths—the difference between the number of observed deaths and the number of deaths expected on the basis of the rates for nonsmokers—for cigarette-only smokers were attributed to coronary heart disease. Corresponding percentages for lung cancer were 7 and 17.

Books received

Books received for review during the period from August 5 to September 5, are listed below. Reviews will be published as space permits.

AUTOMATIC VENTILATION OF THE LUNGS. By William W. Mushin, M.A., M.B., B.S., F.F.A.R.C.S., F.F.A.R.A.C.S., Professor of Anaesthetics, Welsh National School of Medicine, University of Wales; Consultant Anaesthetist, United Cardiff Hospitals and Welsh Regional Hospital Board; Formerly First Assistant, Nuffield Department of Anaesthetics, University of Oxford; L. Rendell-Baker, M.B., B.S., F.F.A.R.C.S., Assistant Professor of Anaesthesia, Western Reserve University School of Medicine, Cleveland, Ohio; Formerly First Assistant, Department of Anaesthetics, Cardiff, and Consultant Anaesthetist, United Cardiff Hospitals and Welsh Regional Hospital Board; and Peter W. Thompson, B.A., M.B., B.Chir., F.F.A.R.C.S., Consultant Anaesthetist, United Cardiff Hospitals and Welsh Regional Hospital Board. Cloth. Pp. 349, with illustrations. Price $10.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1959.

BASIC PHYSICS IN RADIOLOGY. By L. A. W. Kemp, B.Sc., Ph.D., F.Inst.P., Chief Physicist to the London Hospital; and R. Oliver, M.Sc., F.Inst.P., A.M.I.E.E., Principal Physicist in the Department of Radiotherapy of the United Oxford Hospitals. Cloth. Pp. 329, with illustrations. Price $8.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1959.

CHEMICAL QUANTITATION OF EPINEPHRINE AND NOREPINEPHRINE IN PLASMA. Their Plasma Concentration in Hypertension, Shock, and Mental Disease, with some Metabolic Studies. By William Muir Manger, B.S., M.D., Ph.D., Department of Medicine, College of Physicians and Surgeons, New York City, New York; Formerly, Fellow in Medicine Mayo Foundation, Rochester, Minnesota; Khalil G. Wakim, M.D., Ph.D., Section of Physiology, Mayo Clinic, Rochester, Minnesota; and Jesse L. Bollman, M.D., Section of Biochemistry, Mayo Clinic, Rochester, Minnesota. Cloth. Pp. 398, with illustrations. Price $11.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1959.

THE CARE OF MINOR HAND INJURIES. By Adrian E. Flatt, M.A., M.D., F.R.C.S., Assistant Professor of Orthopedic Surgery, State University of Iowa, Iowa City, Iowa. Cloth. Pp. 266, with illustrations. Price $9.50. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, 1959.

BASIC BACTERIOLOGY. Its Biological and Chemical Background. By Carl Lamanna, Ph.D., Scientific Director, Naval Biological Laboratory of the School of Public Health, University of California at Berkeley; and M. Frand Mallette, Ph.D., Associate Professor of Agricultural and Biological Chemistry, The Pennsylvania State University. Ed. 2. Cloth. Pp. 853, with illustrations. Price $13.50. The Williams & Wilkins

Company, Mount Royal and Guilford Avenues, Baltimore 2, 1959.

THE YEAR BOOK OF CANCER. 1958-1959 Year Book Series. Edited by Randolph Lee Clark, Jr., B.S., M.D., M.Sc., (Surgery), D.Sc. (Hon.), Houston, Texas; Director and Surgeon-in-Chief, The University of Texas M. D. Anderson Hospital and Tumor Institute; Professor of Surgery, The University of Texas Postgraduate School of Medicine; Clinical Professor of Surgery, Baylor University College of Medicine; Chairman, Committee on Cancer, American College of Surgeons; F.A.C.S.; and Russell W. Cumley, B.A., M.A., Ph.D., Houston, Texas; Director of Publications, The University of Texas M. D. Anderson Hospital and Tumor Institute; Professor of Medical Journalism, The University of Texas Postgraduate School of Medicine; Executive Editor, Medical Arts Publishing Foundation. Cloth. Pp. 570, with illustrations. Price $8.00. Year Book Publishers, Inc., 200 East Illinois Street, Chicago 11, 1959.

PRINCIPLES AND PRACTICE OF OBSTETRIC ANAESTHESIA. By J. Selwyn Crawford, M.B., Ch.B., D.A. (England), F.F.A., R.C.S., Anaesthesia Service, The Presbyterian Hospital, New York; Late Senior Registrar and First Assistant, Department of Anaesthesia, Central Middlesex Hospital, London. Cloth. Pp. 128, with illustrations. Price $4.00. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1959.

MITRAL VALVULOTOMY. By Harold J. Stewart, M.D., Professor of Clinical Medicine, Cornell University Medical College, New York; Attending Physician, The New York Hospital; In Charge of Cardiology, Department of Medicine, The New York Hospital—Cornell Medical Center; and Frank Glenn, M.D., Lewis Atterbury Stimson Professor of Surgery (Chairman), Cornell University Medical College, New York; Surgeon-in-Chief, The New York Hospital—Cornell Medical Center. Cloth. Pp. 244, with illustrations. Price $10.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1959.

A HANDBOOK FOR DISSECTORS. By J. C. Boileau Grant, Professor Emeritus of Anatomy, and Curator of the Anatomy Museum, The University of Toronto; Formerly by J. C. B. Grant and H. A. Cates. Ed. 5. Paper. Pp. 441, with illustrations. Price $5.00. The Williams and Wilkins Company, Mount Royal and Guilford Avenues, Baltimore 2, 1959.

THE SURGEON AND THE CHILD. By Willis J. Potts, M.D., Surgeon in Chief, Children's Memorial Hospital; Professor of Pediatric Surgery, Northwestern University Medical School, Chicago. Cloth. Pp. 255, with illustrations. Price $7.50. W. B. Saunders Company, West Washington Square, Philadelphia 5, 1959.

THE ARTERIAL WALL. Edited by Albert I. Lansing, A.B., Ph.D., Chairman, Department of Anatomy, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania. Cloth. Pp. 259, with illustrations. Price $7.50. The Williams & Wilkins Company, Mount Royal & Guilford Avenues, Baltimore 2, 1959.

A SYNOPSIS OF OBSTETRICS AND GYNECOLOGY. By Aleck W. Bourne, M.A., M.B., B.Ch. (Camb.), F.R.C.S. (Eng.), F.R.C.O.G., Consulting Gynecologist, St. Mary's Hospital, London; Consulting Obstetric Surgeon, Queen Charlotte's Hospital; Consulting Surgeon, Samaritan Hospital for Women. Formerly Examiner in University of Cambridge, Conjoint Board of England, Royal College of Obstetricians and Gynecologists, and Central Midwives Board. Ed 12. Cloth. Pp. 632, with illustrations. Price $8.00. Bristol: John Wright & Sons, 1959. The Williams and Wilkins Company, exclusive U.S. distributors, Mount Royal & Guilford Avenues, Baltimore 2.

A SYNOPSIS OF ANESTHESIA. By J. Alfred Lee, M.R.C.S., L.R.C.P., M.M.S.A., F.F.A. R.C.S., D.A., Senior Consultant Anesthesia to the Southend-on-Sea Hospital, etc. Ed. 4. Cloth. Pp. 616, with illustrations. Price $6.50. The Williams & Wilkins Company, Mount Royal & Guilford Avenues, Baltimore 2, 1959.

DISEASES OF MEDICAL PROGRESS. A Survey of Diseases and Syndromes Unintentionally Induced as the Result of Properly Indicated, Widely-accepted Therapeutic Procedures. By Robert H. Moser, B.S., M.D., Major, Medical Corps, U.S. Army; Assistant Chief, Department of Medicine, Brooke Army Hospital; Associate Professor of Internal Medicine, Graduate School, Baylor University, Houston, Texas. Cloth. Pp. 131. Price $4.75. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1959.

RECENT ADVANCES IN CARDIOLOGY. By Terence East, M.A., D.M., F.R.C.P., Physician, and Physician-in-charge of Cardiological Department, King's College Hospital; and Curtis Bain, M.C., D.M., F.R.C.P., Consulting Physician, Harrogate General Hospital. Ed. 5. Cloth. Pp. 421, with illustrations. Price $10.00. Little, Brown & Company, 34 Beacon Street, Boston 6, 1959.

CLINICAL COORDINATION OF ANATOMY AND PHYSIOLOGY. By Martha Pitel, Ph.D., R.N.; and Mildred Schellig, M.D. Paper. Pp. 320, with illustrations. Price $5.50. Springer Publishing Company, 44 East 23rd Street, New York 10, 1959.

ORTHOPAEDIC SURGERY. By Sir Walter Mercer, M.B., CH.B. (Edin.), M.Ch.Orth. (Liv.) (Hon.), F.R.C.S. (Edin.), F.A.C.S. (Hon.), F.R.C.S. (Eng.) (Hon.), F.C.S.So.Af. (Hon.), F.R.C.S.I. (Hon.), F.R.S. (Edin.), Professor Emeritus, Orthopedic Surgery, University of Edinburgh; Chairman, Editorial Board, Journal of Bone and Joint Surgery; Chairman, Editorial Board, Journal of the Royal College of Surgeons, Edinburgh; Chairman, Standing Advisory Committee on Artificial Limbs, Ministry of Health; Honorary Fellow, Royal Medical Society, Edinburgh; Corresponding Member of American Orthopedic Society; Honorary Member of Alberta Orthopedic Society; Member, International Orthopedic Society; Fellow, Association of Surgeons of Great Britain and Ireland; Member, International Society of Surgery; Fellow Emeritus, British Orthopedic Association; Fellow, Société International d'Orthopedie et de Traumatologie. Ed. 5. Cloth. Pp. 1075, with illustrations. Price $12.00. The Williams & Wilkins Company, Mount Royal & Guilford Avenues, Baltimore 2, 1959.

SWIRE'S HANDBOOK FOR THE ASSISTANT NURSE. By Ruby Thora Farnol, S.R.N., S.C.M., D.N. (Lond.); Sister Tutor Certificate; Examiner to the General Nursing Council of England and Wales; Formerly Sister Tutor at the Elizabeth Garrett Anderson Hospital, London. Ed. 4. Cloth. Pp. 339, with illustrations. Price $4.00. Baillière, Tindall and Cox, 7 and 8, Henrietta Street, W.C.2, London, 1959. The Williams and Wilkins Company, exclusive U.S. Agents, Mount Royal and Guilford Avenues, Baltimore 2.

SYNOPSIS OF OPHTHALMOLOGY. By William H. Havener, B.A., M.D., M.S. (Ophth.), Professor and Chairman, Department of Ophthalmology, Ohio State University; Member, Attending Staff, University Hospital, Columbus, Ohio; Consultant, Veterans Hospital, Dayton, Ohio; Member, Consulting Staff, Children's Hospital and Mt. Carmel Hospital, Columbus, Ohio. Cloth. Pp. 288, with illustrations. Price $6.75. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, 1959.

EARLY DIAGNOSIS. Edited by Henry Miller, M.D., F.R.C.P., Physician in Neurology, Royal Victoria Infirmary, Newcastle upon Tyne. Cloth. Pp. 400, with illustrations. Price $6.50. E. & S. Livingstone, Great Britain, 1959. The Williams and Wilkins Company, exclusive U.S. distributors, Mount Royal and Guilford Avenues, Baltimore 2.

SPECIFY—SAFE

NON-BARBITURATE
HYPO-ALLERGENIC
Fellows Testagar
pharmaceuticals since 1866
Detroit • Dallas • Los Angeles

FREE CATALOG and INFORMATION KIT!

COLWELL OFFICE RECORD SUPPLIES AND PROFESSIONAL STATIONERY for PHYSICIANS

- DAILY LOG RECORD BOOK
- COLWELL'S APPOINTMENT LOG
- PROFESSIONAL STATIONERY
- PATIENTS' RECORDS
- MEDICAL FORMS
- FILING SUPPLIES

Mail Coupon Today!

THE COLWELL COMPANY
265 W. University Ave., Champaign, Ill.

Please send me the Colwell Catalog for Physicians PLUS Information Kit containing actual samples, detailed descriptions and the newest items in the Colwell line of Practice Management Aids.

DR._____

ADDRESS_____

CITY_____ STATE_____

Changes of address and new locations

Anglemeyer, Walter Clayton, from South Bend, Ind., to 206 W. Lincoln St., Nappanee, Ind.
Atkinson, Floyd H., from 204 N. Tremont St., to 221 S. Tremont St., Kewanee, Ill.

Baird, Glenn A., from Box 189, to 412 N. Second St., Hiawatha, Kans.
Belf, Robert C., from 674 E. Canfield Ave., to Detroit Osteopathic Hospital, 12523 Third Ave., Detroit 3, Mich.
Bender, Charles R., from Grand Rapids, Mich., to 1101 W. Broward Blvd., Fort Lauderdale, Fla.
Benien, Paul F., from 204 Ritz Bldg., to 1628 S. Main St., Tulsa 19, Okla.
Bentz, Robert L., from Homewood Shopping Center to 106 28th St., Lorain, Ohio
Betterman, Mark S., KC '59; South Bend Osteopathic Hospital, 2515 E. Jefferson Blvd., South Bend 15, Ind.
Bisk, Martin, PCO '58; 4758 N. Franklin St., Philadelphia 20, Pa.
Blum, Margaret B., from 1005 N. Cordova St., to Burbank Hospital, 466 E. Olive Ave., Burbank, Calif.
Brabb, Manley B., from Flint, Mich., to Muskegon Osteopathic Hospital, Third & Webster Sts., Muskegon, Mich.
Bragg, Charles H., from 112 N. W. Second St., to Mid-Cities Memorial Hospital, 2733 Sherman Road, Grand Prairie, Texas
Brauer, Richard E., from Johnstown, Colorado, to 1332 S. Bristol St., Santa Ana, Calif.
Breslin, James J., from Trenton, Mich., to 22005 Ecorse Road, Taylor, Mich.
Bridenstine, Harvey R., from Pontiac, Mich., to 2639 Berry Drive, Bloomfield Hills, Mich.
Brooks, Emily C., from 1010 W. Broadway, to 2631 Oklahoma Ave., Muskogee, Okla.
Brown, James F., from Cuyahoga Falls, Ohio, to 1772 Goodyear Blvd., Akron 5, Ohio
Bruno, Franco P., from 800 S. Adams St., to 910 N. Glendale Ave., Glendale 6, Calif.
Buzanis, Theodore C., from 2776 Pacific Ave., to 2272 Pacific Ave., Long Beach 6, Calif.
Byrd, James A., from Youngstown, Ohio, to 1015 Christine St., Houston 17, Texas

Cahill, John Joseph, Jr., from Phoenix, Ariz., to Gila Bend Medical Center, Box 928, Gila Bend, Ariz.
Callahan, Charles E., from Forest Grove, Ore., to 712 Court St., Dallas, Ore.
Cangiano, Pasquale L., from Lakewood, Calif., to 27653 Santa Clarita, Saugus, Calif.
Capobianco, Faust J., from 1132 Atlantic Ave., to 3036 Santa Fe Ave., Long Beach 10, Calif.
Charnov, Paul K., from Detroit, Mich., to Los Angeles County Osteopathic Hospital, 1100 N. Mission Road, Los Angeles 33, Calif.
Clevenger, Arthur A., from 214 W. Lincoln Ave., to 1203 W. Vista Ave., Sunnyside, Wash.
Cohen, Harry C., from Columbus, Ohio, to 9A S. Vassar Square, Ventnor City, N. J.
Cook, Lyle W., from 5811 Truman Road, to Osteopathic Hospital of Kansas City, 926 E. 11th St., Kansas City 6, Mo.
Cunningham, Cecil G., from 1027 Ninth St., to 6904 Bellefontaine Ave., Kansas City 30, Mo.

Davis, D. W., from 415 Goodhue Bldg., to 3398 McFaddin St., Beaumont, Texas

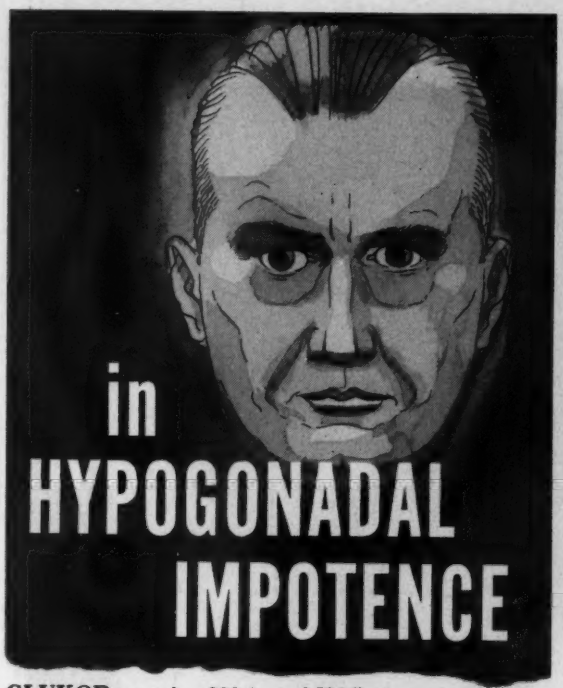
Delgado, Roger R., from Ysleta, Texas, to Box D, Ysleta Station, El Paso, Texas
Derbabian, O. John, from Detroit, Mich., to 28755 Dequindre, Madison Heights, Mich.
Davis, Peter S., from Los Angeles, Calif., to 2800 Pacific Ave., Long Beach 6, Calif.
Del Giudice, Joseph, from St. Louis, Mo., to 6109 S. Crenshaw Blvd., Los Angeles 43, Calif.
Deurloo, Thomas W., from Grand Rapids, Mich., to 612 E. Main St., Caledonia, Mich.
DiSanto, Charles J., from Philadelphia, Pa., to 19 W. Main St., Marlton, N. J.
DiSanto, William E., from South Bend, Ind., to 1821 Sanford St., Muskegon, Mich.
Dixon, Ray C., from Glendale, Calif., to 4430 Village Road, Long Beach 8, Calif.

Epstein, Sheldon M., from Detroit, Mich., to 220B S. Chapel, Alhambra, Calif.
Esselman, George M., from 521 Grand Ave., to 389 Shaw Ave., Dayton 5, Ohio

Ferguson, Chester L., from 801½ Francis St., to 1301 Buchanan Ave., St. Joseph, Mo.
Figg, Dale R., from 124 N. Main St., to 130 N. Main St., Perry, Mich.
Fink, Leon Irwin, from 20 Belvidere St., to 720 Bushwick Ave., Brooklyn 21, N. Y.
Flory, Will H., from 47 S. Ninth St., to 1111 Nicollet Ave., Minneapolis 3, Minn.
Fong, James W., from Oakland, Calif., to 32727 Mission Blvd., Hayward, Calif.
Foster, Denver Royce, from 1911 California St., to 128 E. Broadway, San Gabriel, Calif.
Fredericks, Gene W., COMS '59; Riverside Osteopathic Hospital, 165 George St., Trenton, Mich.
Friedman, Benjamin T., from Mar Vista, Calif., to 12114 Venice Blvd., Los Angeles 66, Calif.

Gazdagh, James C., from Box 124, to 9069 Raisin St., Maybee, Mich.
Geddes, J. Calvin, from 21581 Harrington Road, to 21563 Harrington Road, Mount Clemens, Mich.
Ghiates, Michael P., from Kansas City, Mo., to 379 S. Main St., Greenville, Pa.
Gibbings, Donald Roy, from Detroit, Mich., to 44 Highland Ave., Highland Park 3, Mich.
Gibbs, Robert M., from Oakland, Calif., to 315 E. Charter Way, Stockton 6, Calif.
Godorov, Joseph J., from 2931½ Northview Blvd., to 1407 Wick Ave., Youngstown 4, Ohio
Godwin, James D., from 2521 W. 11th St., to 2602 W. 11th St., Box 4127, Panama City, Fla.
Goldin, Sylvan L., from Flint, Mich., to 1320 N. Dixie Highway, Hollywood, Fla.
Granowicz, Vincent J., COMS '59; 18901 Hamburg St., Detroit 5, Mich.
Grosso, Frank A., from Corona, N. Y., to 122 Lilyan St., Waldwick, N. J.
Grow, Ronald E., from 814 W. Indiana Ave., to 810 W. Indiana Ave., South Bend 14, Ind.
Grow, D. H., from Watervliet, Mich., to Margaret Lyle Memorial Hospital, 952 Euclid Ave., Benton Heights, Benton Harbor, Mich.
Gualtieri, Vincent, from Los Angeles, Calif., to Hillside Hospital, 1940 El Cajon Blvd., San Diego 4, Calif.
Guerra, Richard, from Los Angeles, Calif., to 748 N. Hendricks St., Montebello, Calif.

Haber, Maurice S., from 7726 Atoll Ave., to 11423 Moorpark St., North Hollywood, Calif.
Hannum, Jack H., from Box 162, to Box 127, Le Claire, Iowa
Hansen, Stanley F., from 5410 Wilshire Blvd., to 6515 Wilshire Blvd., Los Angeles 48, Calif.
Harakal, John H., Jr., from Mesquite, Texas, to 6621 Snider Plaza, Dallas 5, Texas
Harding, John T., from 2366 Reo Drive, to 6202 Mission Gorge Road, San Diego 20, Calif.



GLUKOR contains 200 i.u. of HCG (human chorionic gonadotropin) per 1 cc. This hormone has a potent androgenic effect by stimulation of the leydig cells in the interstitial tissue of the testicles.[1]

GLUKOR is fortified for greater androgenic effect in cases of hypogonadal impotence by addition of two synergists, thiamine hydrochloride and L (+) glutamic acid.[2, 3]

The average dosage is 1 cc. intramuscularly twice a week for one month, continuing as required to maintain the androgenic level.

GLUKOR®

FORTIFIED CHORIONIC GONADOTROPIN

REFERENCES:
1. *Drill's Pharmacology in Medicine*, 2nd ed., 1958, p. 949.
2. Gould, W. L., Impotence, *M. Times* 84:302, 1956.
3. Milhoan, A. W., Heterosexual vs. homosexual hormones, *Tri-State M. J.* 6:11 (Apr.) 1958.

Research Supplies PINE STATION, ALBANY, N. Y.

Kindly send me professional reprints covering the use of Glukor for hypogonadal impotence and GLUTEST for frigidity and fatigue in women.

_____ D.O.

Street _____

City _____ Zone _____ State _____

in Acne

Routine cleansing with pHisoHex augments standard acne therapy. "No patient failed to improve."[1] pHisoHex helps check the infection factor in acne. Used exclusively and frequently, it will keep the skin surface virtually sterile. Contains 3 per cent hexachlorophene.

pHisoHex®

(antibacterial detergent, nonalkaline, nonirritating, hypoallergenic)

tips the balance for superior results

Winthrop LABORATORIES
New York 18, N. Y.

1. Hodges, F. T.: GP 14:86, Nov., 1956.

Hartz, G. Richard, from Lansdowne, Pa., to 342 W. King St., Lancaster, Pa.

Heins, Wesley, Jr., PCO '58; 600 S. 48th St., Philadelphia 43, Pa.

Herrick, Stuart B., Jr., from Portland, Maine, to Black Point Road, Scarboro, Maine

Hillyard, William Taylor, KC '59; Phoenix General Hospital, 1950 W. Indian School Road, Phoenix 42, Ariz.

Hipple, John A., from Birmingham, Mich., to 2987 Midland Road, Bay City, Mich.

Hole, William N., from Trenton, Mich., to 13724 Fort St., Wyandotte, Mich.

Holmes, Richard John, from Burbank, Calif., to 5139 Dahlia Drive, Los Angeles 41, Calif.

Homan, Robert K., from 79 Glendale Ave., to 125 Eason Ave., Highland Park 3, Mich.

Howland, G. Keigh, from Decorah, Iowa, to 425 N. Main St., Lenox, Iowa

Jacobsen, Robert E., from 5926 Hazel Ave., to 6047 Hazel Ave., Orangevale, Calif.

Jacobson, Edwin Henry, from West Riverside, Calif., to 5688 Mission Blvd., Riverside, Calif.

Joshowitz, Herbert, from Grove City, Pa., to 22730 Rosewood, Detroit 37, Mich.

Kahn, Erwin S., from Pickford, Mich., to 108 Denver Trail, Azle, Texas

Kahn, Patricia, from Pickford, Mich., to 108 Denver Trail, Azle, Texas

Karlton, George C., from Fort Lauderdale, Fla., to 1215 Pontiac State Bank Bldg., Pontiac, Mich.

Kates, Harold H., from Denver, Colo., to 712 S. Pacific Ave., Glendale 4, Calif.

Katzen, Harold, from Chicago, Ill., to Los Angeles County Osteopathic Hospital, 1100 N. Mission Road, Los Angeles 33, Calif.

Kavanaugh, Frederick L., PCO '58; Bashline Osteopathic Hospital & Clinic, Cor. Pine & Center Sts., Grove City, Pa.

Kelly, Robert H., from Detroit, Mich., to 503 N. Michigan Ave., Saginaw, Mich.

Kette, Albert C., Jr., from Lansdowne, Pa., to West Side Osteopathic Hospital, 1253 W. Market St., York, Pa.

King, Errol R., from 4046 Orange St., to 4063 Seventh St., Riverside, Calif.

Knox, John C., Jr., from Dallas, Texas, to Mid-Cities Memorial Hospital, 2733 Sherman Road, Grand Prairie, Texas

Koepke, Robert C., from Ninth St. & Jackson Ave., to 4531 N. Frankfort Place, Tulsa 6, Okla.

Kopec, Pauline A., from Pontiac, Mich., to 12th St. & Devitt, Campbell, Ohio

Kotanchick, Bernard, KCOS '59; Lakeview Hospital, 1749 N. Prospect Ave., Milwaukee 2, Wis.

Kovacs, Stephen J., Jr., from Philadelphia, Pa., to 245 Securities Bldg., Seattle 1, Wash.

Kuchera, William A., from Kirksville, Mo., to 1006 Spicer Road, Albert Lea, Minn.

Kumm, M. Glen, from Kirksville, Mo., to 406 S. Commercial St., Aransas Pass, Texas

Kuzmick, John D., from Grove City, Pa., to 1563 Center Ave., Fort Lee, N. J.

Laman, J. E., from Benton Harbor, Mich., to Marathon Shores, Fla.

Lans, Allan M., from Des Moines, Iowa, to 50 Sugden St., Bergenfield, N. J.

Larson, Norman J., from 1691 Henry Ave., to 1633 Lee St., Des Plaines, Ill.

Leech, John E., from 1149 Iroquois Drive, S. E., to 1143 Giddings St., Grand Rapids 6, Mich.

Leonard, Harry M., from Harrisburg, Pa., to Blain, Pa.

Leopold, Roy A., from 617 N. Main St., to 1304-4 E. Chestnut St., Garden City, Kans.

LePere, Ronald R., from Pontiac, Mich., to 55 S. Main St., Clarkston, Mich.

Lesniewski, John C., from Houston, Texas, to 2536 Stoneybrook Lane, Drexel Hill, Pa.
Lesonsky, Seymour, from North Hollywood, Calif., to 2119 Alden Ave., Anaheim, Calif.
Levin, William, from Highland Park, Mich., to 6544 N. Gratz St., Philadelphia 26, Pa.
Levine, Edward J., from 761-65 Reibold Bldg., to 1731 Newton Ave., Dayton 6, Ohio
Levine, Stanley, CCO '59; Detroit Osteopathic Hospital, 12523 Third Ave., Detroit 3, Mich.
Libell, Charles F., from Pittsburgh, Pa., to 228 Niagara St., Dayton 5, Ohio
Lightstone, Harold, from Allentown, Pa., to 4745 B St., Philadelphia 20, Pa.
Lindenbaum, Ellis J., from 1759 Georges Lane, to 1101 Morefield Road, Philadelphia 15, Pa.
Liverman, Raymond E., from Dallas, Texas, to 216 N. Duncanville Road, Duncanville, Texas
Loest, Edward H., from 498 E. 78th St., to 204 Pan American Bank Bldg., Miami 32, Fla.
Loniewski, Edward A., from Philadelphia, Pa., to Detroit Osteopathic Hospital, 12523 Third Ave., Detroit 3, Mich.

MacRae, Kenneth I., from Box 135, to 6590 Main St., Cass City, Mich.
Manlove, Duane Louis, from 326 E. 29th St., to 2907 Brady St., Davenport, Iowa
Margolis, Jerry G., from 50 N. Perry St., to 4926 Elizabeth Lake Road, Pontiac, Mich.
Martin, Hirschel A., from 1772 Goodyear Blvd., to 970 Hartford Ave., Akron 20, Ohio
McAnally, Harold J., from 926 E. 11th St., to 3102 Troost Ave., Kansas City 9, Mo.
McCabe, Gerald E., CCO '58; Detroit Osteopathic Hospital, 12523 Third Ave., Detroit 3, Mich.
McClimans, Leslie A., from South Bend, Ind., to Mid-Cities Memorial Hospital, 2733 Sherman Road, Grand Prairie, Texas
Meachum, Floyd T., CCO '58; 2920 Richton Ave., Detroit 6, Mich.
Monk, Rodney B., from 2515 E. Jefferson Blvd., to 2811 Mishawaka Ave., South Bend 15, Ind.
Merwin, Ralph Crim, from Carson City, Mich., to 4110 Forest Drive, Port Arthur, Texas
Meyers, Grace H., from 47 S. Ninth St., to 3731 Park Ave., Minneapolis 7, Minn.
Miller, Garth D., from 966 E. Del Mar Ave., to 2271 E. Washington St., Pasadena, Calif.
Minkin, Richard D., from Los Angeles, Calif., to 917 Park Circle, Anaheim, Calif.
Mitchell, William D., from Philadelphia, Pa., to 23 N. 12th St., Allentown, Pa.
Morgan, Carl Andrew, CCO '58; 4440 E. Seven Mile Road, Detroit 34, Mich.
Muecke, O. R., from Pratt, Kans., to 4021 N. 24th St., Phoenix 22, Ariz.
Murray, Robert L., from San Pedro, Calif., to 7413 W. Manchester Ave., Los Angeles 45, Calif.

Nadridge, Maurice S., COPS '58; 5742 Grand Ave., Buena Park, Calif.
Neumann, LeRoy S., COMS '59; 18019 Indiana, Detroit 21, Mich.
Nimmer, Wilbur A., from Rural Professional Bldg., to Sturtevant Clinic, Sturtevant, Wis.

Olson, James A., from Milwaukee, Wis., to 302 N. Third St., Watertown, Wis.
Ozog, Stanley A., from 5937 St. Lawrence, to 19600 W. Warren Ave., Detroit 28, Mich.

Page, Clayton P., from 47 S. Ninth St., to 730 Hennepin Ave., Minneapolis 3, Minn.
Parrott, Charles E., DMS '58; 3654 Syracuse Ave., Dearborn, Mich.
Paskil, Harry M., COPS '58; 325 N. 12th St., Montebello, Calif.
Peak, James W., KC '59; Mesa Memorial Hospital, 10th & Grand, Grand Junction, Colo.

CROSS

THE PREPARATION OF MEDICAL LITERATURE

In one convenient source, here are all the practical technics used in preparing medical literature for publication — technics representative of generally accepted procedures rather than the preferences of individuals or special groups. Organized in the order in which such work is usually done, the book covers: Planning, Gathering Material, Writing, Style and Styling, Illustration, Editing, Proofreading, Indexing, and New Editions.

451 Pages 80 Illustrations NEW, 1959 $10.00

SMITH

PRINCIPLES OF DISABILITY EVALUATION

This new and timely book presents the philosophy and logic underlying a sound understanding of disability, appraisal of the degree of disability, and the limitations of medical science as to the types of disability it can measure. Covers basic definitions, tenets and principles, describes all types of disability. Provides ready help in making evaluations which are medically accurate and legally acceptable.

210 Pages Illustrated NEW, 1959 $7.00

SAUER

MANUAL OF SKIN DISEASES

To meet the demand for "a good short book on dermatology," this new text contains only material which students and general practitioners must know for diagnosis and treatment of common skin diseases. For convenience, Part I contains chapters which give the salient points of each disease (primary and secondary lesions, distribution, general course, prognosis, etc.) differential diagnosis and treatment. Part II is a Dictionary-Index to all dermatology including most rare diseases.

270 Pages 151 Figures and 28 Color Plates
NEW, 1959 $9.75

LOCKHART, HAMILTON & FYFE

ANATOMY OF THE HUMAN BODY

Omitting the obvious and avoiding repetition, this new text teaches anatomy in half the usual number of words—much of the text appearing in the careful labeling of illustrations. Clinical aspects are stressed in context—not segregated to the ends of sections. A book designed to ease the student's burden and quicken his interest in the subject.

697 Pages 965 Illustrations 600 in Color
NEW, 1959 $14.75

J. B. LIPPINCOTT COMPANY,
East Washington Square, Philadelphia 5, Pa.

Please enter my order and send me:

☐ THE PREPARATION OF MEDICAL LITERATURE $10.00
☐ PRINCIPLES OF DISABILITY EVALUATION $ 7.00
☐ MANUAL OF SKIN DISEASES $ 9.75
☐ ANATOMY OF THE HUMAN BODY $14.75

NAME..... ☐ Charge
ADDRESS..... ☐ Convenient Monthly Terms
CITY..... ZONE .... STATE .... ☐ Payment Enclosed
JAOA-10-59

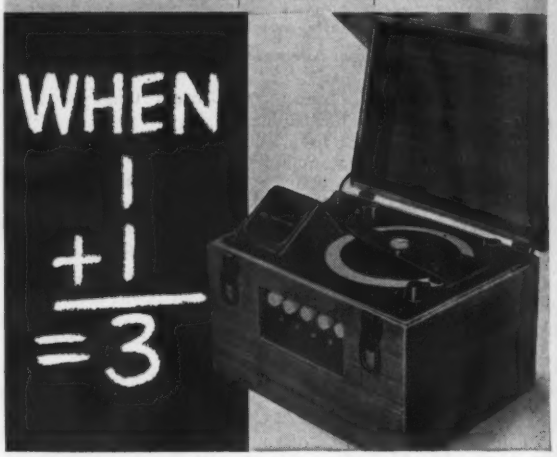
Pearl, Conrad Robert, from 18312 Ardmore, to 18518 Joy Road, Detroit 28, Mich.
Plattner, Albert L., from 813 E. Main St., to Plattner Clinic & Osteopathic Hospital, 322 N. E. Eighth St., Grand Prairie, Texas
Plattner, Emil P., from 813 E. Main St., to Plattner Clinic & Osteopathic Hospital, 322 N. E. Eighth St., Grand Prairie, Texas
Plattner, Herman H., from 813 E. Main St., to Plattner Clinic & Osteopathic Hospital, 322 N. E. Eighth St., Grand Prairie, Texas
Pool, E. B., from 17 W. Chickasaw, to Pool Memorial Hospital, 115 W. Chickasaw, Lindsay, Okla.
Pool, William E., from 17 W. Chickasaw, to Pool Memorial Hospital, 115 W. Chickasaw, Lindsay, Okla.
Pounds, F. Sims, Jr., COMS '59; 1002 E. 106th St., Indianapolis 20, Ind.
Pyzer, Lloyd E., from Grand Junction, Colo., to 275 O'Connor Drive, San Jose 28, Calif.
Pullum, Lois Edith, from Des Moines, Iowa, to Hospital of Philadelphia College of Osteopathy, 48th & Spruce Sts., Philadelphia 39, Pa.
Pullum, Richard W., from Des Moines, Iowa, to Allentown Osteopathic Hospital, 1736 Hamilton St., Allentown, Pa.

Rakow, Alexander B., from 12 Park Circle, Highland Park, to 315 N. Second St., Harrisburg, Pa.
Rakow, Josephine M., from 12 Park Circle, to 1920 Market St., Camp Hill, Pa.
Rayman, Elmore M., from Downey, Calif., to 2006 Durfee Ave., El Monte, Calif.
Reames, Philip W., from 1230 Carson St., to 2785 Pacific Ave., Long Beach 6, Calif.
Remsberg, Harmon W., from 402 American Natl. Bank Bldg., to 709 Wolcott Bldg., Hutchinson, Kans.
Rente, Sidney R., Jr., from Detroit, Mich., to The Doctors Hospital of St. Petersburg, Inc., 401 15th St., N., St. Petersburg 5, Fla.
Renzi, Caroline M., from Philadelphia, Pa., to 247 Centre St., Trenton 10, N. J.
Riccelli, John A., from El Segundo, Calif., to 1200 Esplanade, Redondo Beach, Calif.
Robin, Murray, from 409 17th St., to 900 Straight Path, West Babylon, N. Y.
Rodos, J. Jerry, KCOS '59; 6 Yale Ave., Dayton 6, Ohio
Roitz, Antone John, from Denver, Colo., to 6533 Lexington Ave., Hollywood 38, Calif.
Root, Blanche M., from Los Angeles, Calif., to 1531 Serenade Terrace, Corona del Mar, Calif.
Rose, Lester G., from Sacramento, Calif., to 4939 Kenneth Ave., Fair Oaks, Calif.
Roshan, Mansour, COPS '58; 1132 Atlantic Ave., Long Beach 13, Calif.
Roskos, Robert, from Grove City, Pa., to 638 Stambaugh Ave., Sharon, Pa.

Salman, Samuel Jerome, from Kansas City, Mo., to 6481 S. W. 27th St., Miramar, Hollywood, Fla.
Sanders, Ben J., from Burbank, Calif., to 970 N. Serrano Ave., Hollywood 29, Calif.
Saunders, I. J., from Monticello, Fla., to 121½ E. College Ave., Tallahassee, Fla.
Schlepphorst, Jodie A., from Houston, Texas, to 156 S. Main St., Fredericktown, Mo.
Schneiderman, Marcia Jean, from 612 W. Jefferson St., to 616 W. Jefferson St., Kirksville, Mo.
Schrader, Alfred L., from Cape Girardeau, Mo., to 109 S. Church St., Trenton, Tenn.
Schroeder, Vernon R., from 1940 El Cajon Blvd., to 4167 Ohio St., San Diego 4, Calif.
Schulz, Pearle Barker, from Cleveland Heights, Ohio, to 4901 S. Indian River Drive, Fort Pierce, Fla.
Schulz, William H., from Cleveland Heights, Ohio, to 4901 S. Indian River Drive, Fort Pierce, Fla.
Senese, Robert J., from Detroit, Mich., to 16217 E. Eleven Mile Road, Roseville, Mich.
Senty, Roger F., from Des Moines, Iowa, to Doctors Hospital, 1087 Dennison Ave., Columbus 1, Ohio

Cambridge

AUDIO-VISUAL *heart sound* RECORDER

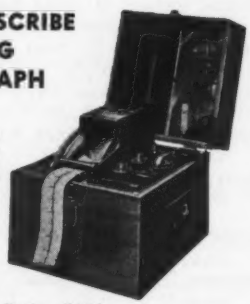


Mathematically, of course, 1 plus 1 does not equal three, but the Cambridge Audio-Visual Heart Sound Recorder makes a seeming paradox — true! The simultaneous, instantaneous viewing and hearing of the heart sounds give more than the simple sum of the two . . . they provide the plus factor!

With this most versatile instrument, the Doctor hears the heart sounds faithfully reproduced through binaural ear phones while viewing the pattern on the long persistence screen of a cathode ray tube.

Any portion of the heart sounds may be permanently recorded upon thin magnetic discs. These paper-thin but durable records may be filed as part of a patient's history or mailed for consultation. They may be "played back" (both heard and viewed) for study or for consultation.

CAMBRIDGE SIMPLI-SCRIBE DIRECT WRITING ELECTROCARDIOGRAPH



Provides the Cardiologist, Clinic or Hospital with a portable direct writing Electrocardiograph of utmost usefulness and accuracy. Size 10¾" x 10¾" x 11". Weighs 28 pounds with all accessories.

Send for Bulletin #185

CAMBRIDGE INSTRUMENT CO., Inc.
3732 Grand Central Terminal, New York 17, N. Y.
Oak Park, Ill., 6605 West North Avenue
Cleveland 11, 13000 Triskett Road
Detroit 2, 7410 Woodward Avenue
Jenkintown, Pa., 479 Old York Road
Silver Spring, Md., 933 Gist Avenue

PIONEER MANUFACTURERS OF THE ELECTROCARDIOGRAPH

CAMBRIDGE
CARDIAC DIAGNOSTIC INSTRUMENTS

Seruto, Philip, from 3858 E. Colorado St., to 3733 E. Colorado St., Pasadena, Calif.
Shankwiler, Reed A., from 12523 Third Ave., to 1609 Broderick Tower, Detroit 26, Mich.
Shapoory, Rahim, from 466 E. Olive Ave., to 1013 W. Olive Ave., Burbank, Calif.
Shedler, Leonard, from Bay Village, Ohio, to 39 Engle Road, Paramus, N. J.
Shkane, Albert M., from Saginaw, Mich., to 201 Bloomfield Ave., Verona, N. J.
Simmons, Harry I., from Columbus Ohio, to 1459 Fort St., Wyandotte, Mich.
Simonian, Simon, from Greenville, Mich., to Detroit Osteopathic Hospital, 12523 Third Ave., Detroit 3, Mich.
Sivak, George, from 239 W. Tenth St., to 1032 E. 38th St., Erie, Pa.
Sluder, Hugh G., from 912 W. Church St., to 302 W. Springfield Ave., Champaign, Ill.
Snoke, Paul S., from Philadelphia, Pa., to 736 Northwood Road, Fort Worth 7, Texas
Solana, Louis J., from Monterey Park, Calif., to 1610 E. Whittier Blvd., Whittier, Calif.
Spangler, Martin Luther, Jr., from Philadelphia, Pa., to 900 N. Fifth St., Reading, Pa.
Spurgeon, Patricia, from 17215 Pennington Drive, to Detroit Osteopathic Hospital, 12523 Third Ave., Detroit 3, Mich.
Stavrand, Hubert Martin, from Portland, Maine, to 137-29 224th St., Laurelton 13, N. Y.
Stevenson, George W., Jr., from Milwaukee, Wis., to Hustisford Hospital & Clinic, Hustisford, Wis.
Stirling, Marie H. Strakis, from 3725 S. State Road 67, to 3725 Kentucky Ave., Indianapolis 41, Ind.
Stirling, Robert K., from 3725 S. State Road 67, to 3725 Kentucky Ave., Indianapolis 41, Ind.
Stonier, D. Duane, from 5502 Santa Monica Blvd., to 2166 Moreno Drive, Los Angeles 39, Calif.
Strinka, Andrew A., from Cleveland, Ohio, to 24455 Donover Road, Warrensville Heights, Ohio
Sullivan, C. B., from Ninth St. & Jackson Ave., to 1623 E. 15th St., Tulsa 20, Okla.
Susser, David, from 58 Martin Place, to Zieger Osteopathic Hospital, 4244 Livernois Ave., Detroit 10, Mich.

Tarlow, Herbert D., from Vienna XIV, Austria, to Kallkallegaton 13B, Goteborg O, Sweden
Thiele, Robert, from Marietta, Ohio, to 205 Seneca Ave., Byesville, Ohio
Tindall, James Ernest, from LaPuente, Calif., to 18053 E. Valley Blvd., City of Industry, Calif.
Trunk, Leon Martin, from 9041 W. 25th St., to Los Angeles County Osteopathic Hospital, 1100 N. Mission Road, Los Angeles 33, Calif.

Vance, Robert Bliss, from Bay City, Mich., to 801 Scheurmann St., Essexville, Mich.
Van Wagenen, Rulon Eugene, from Sacramento, Calif., to 124 W. Columbus St., El Monte, Calif.

Wainschel, Jack, from Los Angeles, Calif., to 1800 Fair Oaks Ave., South Pasadena, Calif.
Walsh, Joseph A., Jr., from Detroit, Mich., to 23 Chester Pike, Collingdale, Pa.
Wasserman, Richard Lee, from 201 E. 66th Terrace, to 904 W. 93rd Terrace, Kansas City 14, Mo.
Watts, Russell W., from 1609 Orchid Ave., to 5852 Saloma Ave., St. Louis 20, Mo.
Weathers, William A., from Dell City, Texas, to 306 W. T. Waggoner Bldg., Fort Worth 2, Texas
Weller, Ronald J., CCO '58; 933 W. Grand Blvd., Detroit 8, Mich.
Wetzel, Richard, from 1307 Brush Creek Blvd., to Osteopathic Hospital of Kansas City, 926 E. 11th St., Kansas City 6, Mo.
Whittemore, Joe D., from 1141 Brady St., to 2907 Brady St., Davenport, Iowa
Wiley, David E., PCO '58; 32-8 Revere Road, Drexel Hill, Pa.

NEW FOWLER BASEBALL FINGER SPLINT

*faster, easier to apply

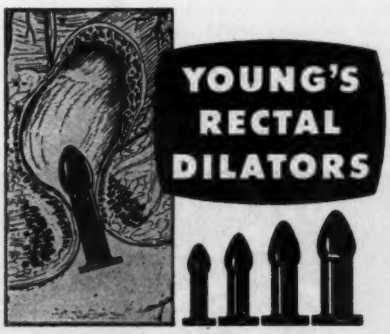
Indicated for "baseball finger"—fracture of the dorsal articular facet of the distal phalanx. Set for ideal degree of over-correction. Quickly applied. Comfortable. Aluminum, transparent to X-ray. Be prepared—

ORDER NOW!

No. 786, $0.50 ea.
$5.50 per doz.

SINCE 1895
De Puy
STANDARD OF QUALITY

MANUFACTURING CO., INC.
Warsaw, Indiana



FOR RECTAL AND VAGINAL USE

Rectally For:
- Spastic Constipation
- Ano Stricture . . . Prolapse
- Post-hemorrhoidectomy
- Post-fistulectomy

Vaginally For:
- Dyspareunia
- Vaginismus
- Perineal Repair

Gently stretch tight, spastic, or hypertrophic sphincters. Help train defecation reflex, reduce tonus, induce mild peristalsis. In graduated sizes for progressive therapy. **Infants:** in flexible rubber. **Children and Adults:** in bakelite.

Send for Literature

F. E. YOUNG AND COMPANY
8057 Stony Island Ave., Chicago 17, Ill.

HAVE YOUR PATIENTS EXPERIENCED THE ADVANTAGES OF ANTIPYRINE...

SAFETY

Side effects are generally absent with FELSOL . . . antipyrine causes no harmful effects to normal persons.

EFFICACY

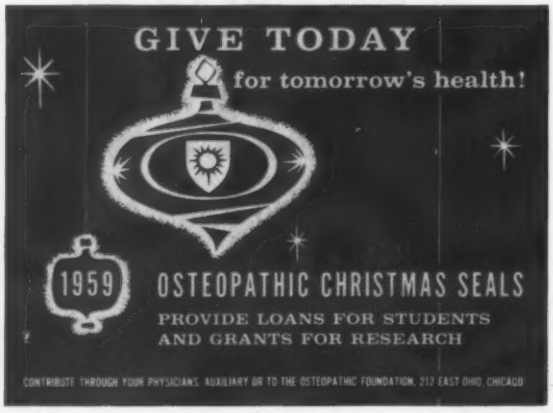
FELSOL is effective as an antiasthmatic, analgesic, and antipyretic — elevating threshold in cases where prompt and enduring antipain or antifever action is required.

IN THE Felsol FORMULA

Rx	Each Powder	Each Tablet
Antipyrine	870 mg	435 mg
Iodopyrine	30 mg	15 mg
Citrated Caffeine	100 mg	50 mg

Try this safe and effective preparation for symptomatic treatment. Write for free professional samples and literature.

AMERICAN FELSOL CO., BOX 395, LORAIN, O.


GIVE TODAY
for tomorrow's health!
1959
OSTEOPATHIC CHRISTMAS SEALS
PROVIDE LOANS FOR STUDENTS AND GRANTS FOR RESEARCH
CONTRIBUTE THROUGH YOUR PHYSICIANS' AUXILIARY OR TO THE OSTEOPATHIC FOUNDATION, 212 EAST OHIO, CHICAGO

Williams, Polesta I., from Fairview Park, Ohio, to 27712 Lorain Road, North Olmsted, Ohio

Witt, John Robert, Jr., from 2834 Glendale Blvd., to 1834 Lucile Ave., Los Angeles 26, Calif.

Witte, Henry W., from Chicago, Ill., to 7330 W. 109th St., Worth, Ill.

Wonderly, Robert O., from Eldon, Mo., to 313 Jackson, Jefferson City, Mo.

Wong, George, Jr., from 2776 Pacific Ave., to 1580 W. 23rd St., Long Beach 10, Calif.

Wysong, Ben L., Jr., KCOS '59; Grand Rapids Osteopathic Hospital, 1919 Boston St., S. E., Grand Rapids 6, Mich.

Xenakis, Alexander D., from 2212 S. 66th St., to 6745½ Greenway Ave., Philadelphia 42, Pa.

Zipper, Bernice D., from Youngstown, Ohio, to 1009 Fanny St., Elizabeth, N. J.

Applications for membership

CALIFORNIA

Hooper, Roy, (Renewal) 6828 La Tijera Blvd., Los Angeles 45

Manuele, Sebastian, (Renewal) 3500 E. First St., Los Angeles 63

Smith, Kenneth B., (Renewal) 3178 Arcade Blvd., North Sacramento 15

Nichols, Lester E., (Renewal) 1001 Palmdale Blvd., Box 117, Palmdale

Swearingen, Gertrude F., (Renewal) 275 O'Connor Drive, San Jose 12

Poliquin, Ramon G., (Renewal) 6801 Haskell Ave., Van Nuys

KANSAS

Charbonneau, Eugene U., (Renewal) Osborne

MASSACHUSETTS

Harris, Harry E., 90 Bynner St., Jamaica Plain, Boston 30

MICHIGAN

Stewart, Leslie B., (Renewal) Jackson Osteopathic Hospital, 121 Seymour Ave., Jackson

Buchacker, F. LeRoy, (Renewal) 2905 Third & Glenwood, Wayne

MISSOURI

Elster, Henry R., (Renewal) Post Office Bldg., Hamilton

Stephens, James E., (Renewal) 211 W. 20th St., Joplin

NEBRASKA

Kirk, Lisle C., (Renewal) 1128 W. Fourth St., Hastings

NEW JERSEY

Bolton, John J., (Renewal) 30 Engle St., Tenafly

NEW YORK

Wilson, H. Clifford, (Renewal) 659 Chilton Ave., Niagara Falls

PENNSYLVANIA

Logan, David, (Renewal) 7735A Lucretia Mott Way, Elkins Park 17

Jackson, Mabel C., (Renewal) 130 Walnut Ave., Wayne

TEXAS

Barberee, Charles P., (Renewal) 901 N. Jefferson St., Mount Pleasant

WISCONSIN

Dennis, Wallace L., (Renewal) 5918 W. North Ave., Milwaukee 8

ADVERTISERS' INDEX

Abbott Laboratories, A-39, 40, 188, 189
American Felsol Co., A-224
American Meat Institute, A-135
American Optical Company, A-149
American Osteopathic Assn., A-224
American Sterilizer Co., A-83
Ames Co., Inc., A-16
Armour Pharmaceutical Co., A-85
Ayerst Laboratories, A-32, 34, 51, 76, 100, 101, 112-113, 144

Baker Laboratories, Inc., A-136, 137
Bard-Parker Co., Inc., A-139
Baxter, Don, Inc., A-209-210
Birtcher Corp., A-173
Borcherdt Corp., A-225
Breon, George A., & Co., A-178
Bristol Laboratories, Inc., A-17, 18, 19, 20, 21, 22, 109, 110, 181, 182
Bristol-Myers Co., Cover II
Burdick Corp., A-162
Burroughs Wellcome & Co., (U.S.A.) Inc., A-90, 158

Cambridge Instrument Co., Inc., A-222
Carnation Co., A-42, 111
Chatham Pharmaceuticals, Inc., A-148
Chicago Pharmacal Co., A-175
Chicopee Mills, Inc., A-93
Ciba Pharmaceutical Products, Inc., Cover IV, A-30, 31, 84
Cole Chemical Co., A-95
Colwell Co., A-217

Dartell Laboratories, A-24
Davol Rubber Co., A-6
DePuy Mfg. Co., A-223
Desitin Chemical Co., A-163
Doho Chemical Corp., A-82
Dome Chemical, A-183

Eaton Laboratories, A-49, 131, 176, 177, 190

Fellows Medical Mfg. Co., Inc., A-217
Fleet, C. B., Co., Inc., A-56

Geigy Pharmaceuticals, A-28, 41
General Electric Co., X-Ray Dept., A-75
Gerber Products Co., A-77
Gomco Surgical Mfg. Corp., A-89

Holland-Rantos Co., Inc., A-70, 94
Hollister, Franklin C., Co., A-130
Hyland Laboratories, Inc., A-197

Irwin, Neisler & Co., A-37

Kinney & Co., Inc., A-184
Kremers-Urban Co., A-150

Lea & Febiger, A-215
Lederle Laboratories, A-14, 15, 153, 194, 195
Leeming, Thos., & Co., A-64
Lilly, Eli, & Co., A-138
Lippincott, J. B., Co., A-221

Maltbie Labs., Div., (Wallace & Tiernan Inc.), A-43
Massengill, S. E., Co., A-151, 152, 191, 192

McNeil Laboratories, Inc., A-50, 128, 174, 196
Mead Johnson & Co., A-164, 165, 193
Merck Sharp & Dohme, A-66, 67, 204, 205
Merrell, The Wm. S., Company, A-86, 87
Metabolic Products Corp., A-208

National Drug Co., A-107

Ortho Pharmaceutical Corp., A-27

Parke, Davis & Co., A-9, 155
Pelton & Crane Co., A-168
Pet Milk Co., A-226
Pfizer Laboratories, A-7, 23, 25, 36, 69, 80, 104, 142, 143, 200, 201
Pitman-Moore Co., A-73

Research Supplies, A-219
Riker Laboratories, Inc., Cover III
Robins, A. H., Co., Inc., A-61, 72, 114, 115
Roche Laboratories, A-12, 13, 44, 45, 54, 55
Roerig, J. B., & Co., Inc., A-103, 108, 206, 207
Rorer, William H., Inc., A-161
Roussel Corp., A-160

Sandoz Pharmaceuticals, A-74, 119, 120, 121, 122, 123, 124
Saunders, W. B., Co., A-4
SchenLabs Pharmaceuticals, Inc., A-179
Schering Corp., A-3, 202, 218
Schmid, Julius, Inc., A-140, 141
Searle, G. D., & Co., A-5
Sherman Laboratories, A-145
Shield Laboratories, A-211
Smith-Dorsey, A-146, 147, 156, 157
Smith Kline & French Labs., A-10, 11, 88, 96, 97, 198, 199
Squibb, E. R., & Sons, A-62, 63, 126, 132
Strasenburgh, R. J., Co., A-46, 47, 48
Stuart Co., A-52, 53, 65

Taylor Instrument Cos., A-214
Tutag, S. J., & Co., A-187

U.S. Vitamin & Pharmaceutical Corp., A-166, 167
Upjohn Co., A-35, 185

Vitaminerals Inc., A-105

Wallace Laboratories, A-106, 127, 180, 212, 213
Wampole Laboratories, A-159
Warner-Chilcott Laboratories Div., A-1, 26, 29, 129
Webster, William A., Co., A-216
White Laboratories, Inc., A-8, 33, 38, 78, 79, 91, 92, 102, 116, 117, 118, 186
Winthrop Laboratories A-57, 58, 59, 60, 68, 81, 169, 170, 171, 172, 220
Wocher, Max & Son Co., A-203
Wyeth Laboratories, A-71, 98-99, 125
Wynn Pharmacal Corporation, A-154

Young, F. E., & Co., A-223

FOR
GERIATRIC CONSTIPATION

Borcherdt's
MALT SOUP EXTRACT
(MALTSUPEX)
POWDER

is Gentle, Safe, Sure, Dietary.

It's available in two forms, liquid and powder, but most adults prefer the mild tasting powder. It dissolves instantly in milk, water or juices. It promotes aciduric flora in the lower bowel which helps restore normal function. Long term treatment produces no side effects. Diabetic patients should allow for 60 calories for each tablespoonful.

Hootnick (1) reports, "Stools became soft in all patients and, within one week, bowel evacuations were accomplished with ease. Most patients liked the taste of the product, and the majority of them reported a feeling of well-being."

Cass and Frederik (2) also found that "Malt Soup Extract produced soft, easily evacuated stools without any side effects in constipated elderly patients."

Marshall (3) found it "a simple but highly effective treatment for chronic constipation in patients of all ages."

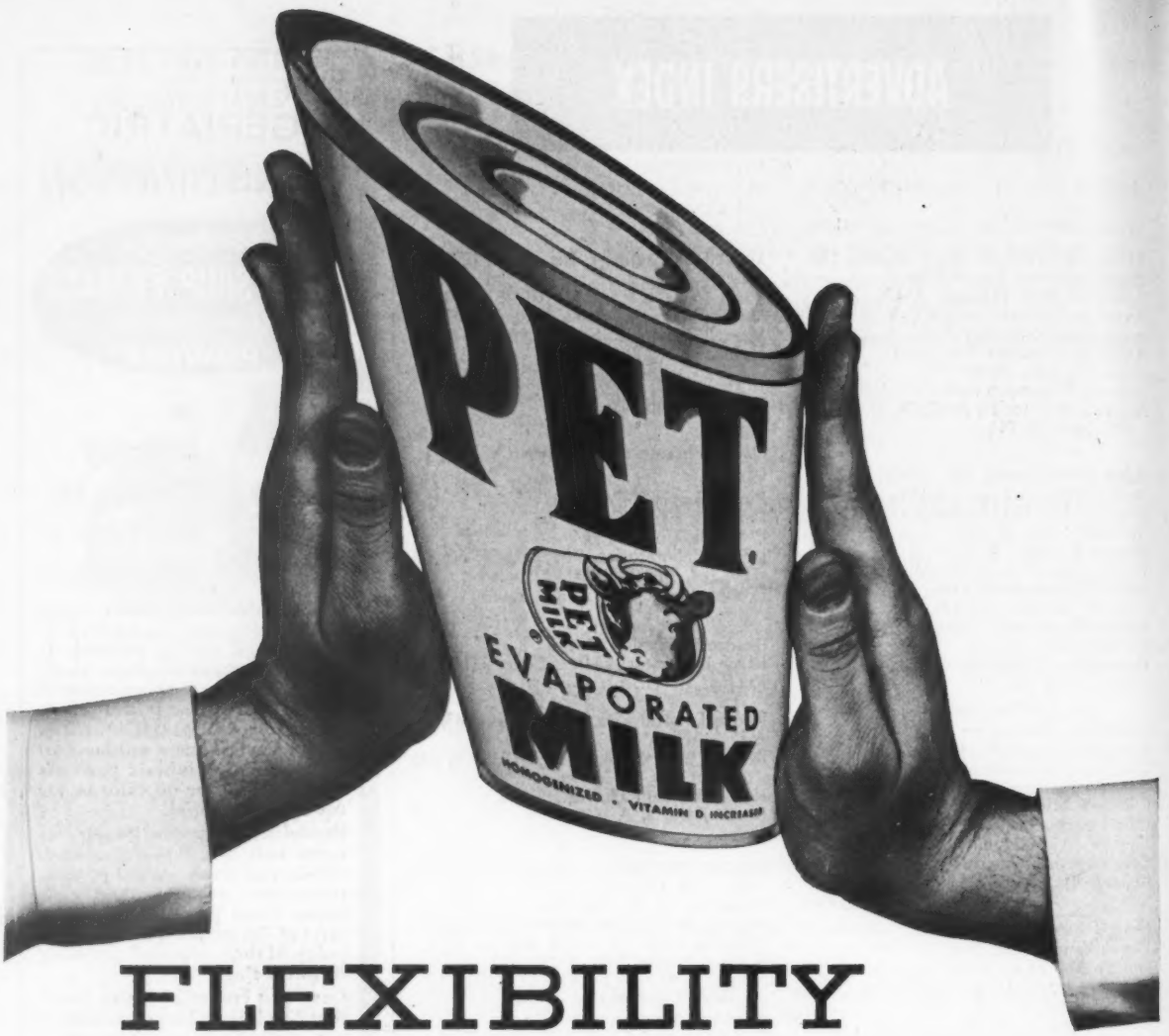
Dose: 2 tablespoonfuls twice a day. Available, liquid and powder, 8 ounce and 16 ounce bottles, at pharmacies.

Send for clinical samples

(1) Hootnick, H. L.: Jnl. Amer. Ger. Soc., 4:1021-1030, 1956. (2) Cass, L. J. and Frederik, W. S.: Jnl. Lancet, 73:414-416, 1953. (3) Marshall, W.: So. Dak. J. Med. & Pharm. 8:151-153, 1955.

Borcherdt Company
217 North Wolcott Avenue, Chicago 12, Ill.
In Canada: Chemo-Drug Co., Ltd., Toronto, Ontario.

Borcherdt Company GP
217 N. Wolcott Ave., Chicago 12, Ill.
Gentlemen: Please send samples and literature of your Malt Soup Extract (Maltsupex)
☐ Powder ☐ Liquid
_____ D.O.
Address _____
City _____ Zone ____ State _____



FLEXIBILITY

in the formula base has obvious advantages to the physician, who must decide what each infant needs, and when changes are indicated. An evaporated milk formula is a prescription formula, permitting the physician to adjust

... the type and amount of carbohydrate

... the degree of dilution to required strength

Evaporated milk is the formula base proved successful by clinical experience . . . for 50 million babies.

FLEXIBILITY PLUS:

Higher protein level recommended when cow's milk is fed to babies

Added vitamin D in required amounts

Maximum nourishment—minimum cost to parents

©1959

PET MILK COMPANY, ST. LOUIS 1, MO.

Counteract Depression with distinctively WELL-TOLERATED

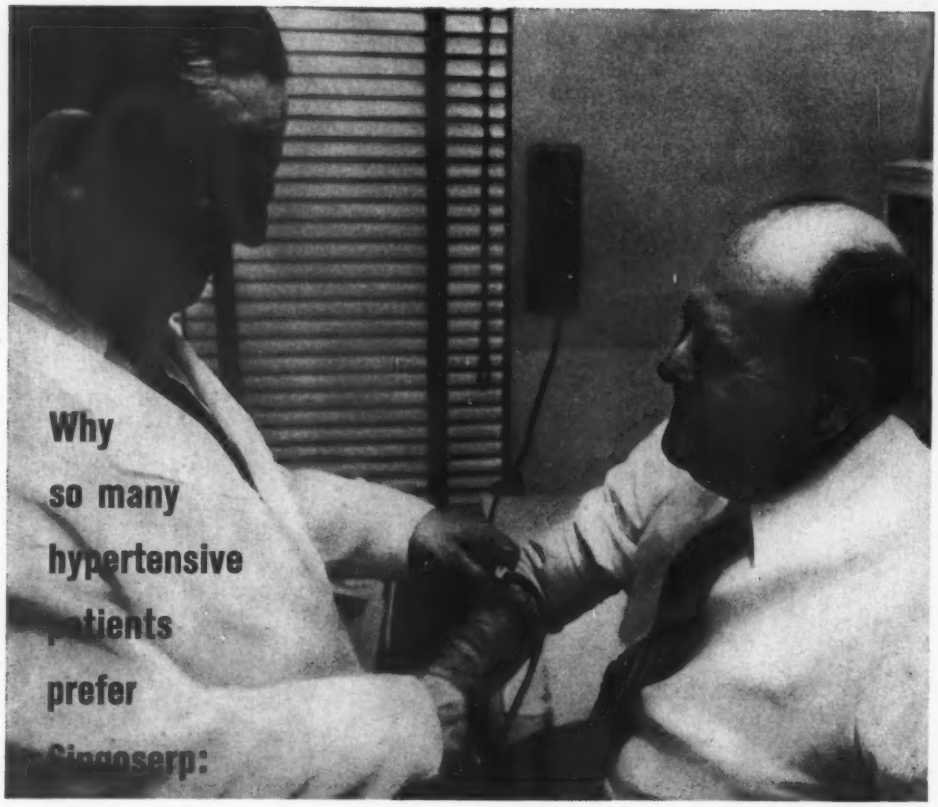
®

deanol acetamidobenzoate

- 'Deaner' may be prescribed with little or no concern over side effects even in the presence of liver disease, diabetes, cardiovascular disease, and a long list of other chronic conditions, except grand mal epilepsy (only contraindication).
- 'Deaner' *is not a monoamine oxidase inhibitor;* hence it is not necessary to monitor its administration with repeated, expensive laboratory tests.
- This notable freedom from side effects endows Deaner's long-term administration with easier patient supervision, better patient cooperation, and greater safety.
- Dosage is simple—initially, 50 mg. (2 tablets) daily in the morning. *Gradually, apathy and defeat are transformed into affability and renewed interest and vigor.*

Write for details and the applicability of 'Deaner' in behavior problems of children

Riker Northridge California



It spares them from the usual rauwolfia side effects

FOR EXAMPLE: "A clinical study made of syrosingopine [Singoserp] therapy in 77 ambulant patients with essential hypertension demonstrated this agent to be effective in reducing hypertension, although the daily dosage required is higher than that of reserpine. Severe side-effects are infrequent, and this attribute of syrosingopine is its chief advantage over other Rauwolfia preparations. The drug appears useful in the management of patients with essential hypertension."*

*Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J. C.: J.A.M.A. 169:1609 (April 4) 1959.

Remember SERPASIL® (reserpine CIBA) for the anxious hypertensive with or without tachycardia

Singoserp®
(syrosingopine CIBA)

First drug to try in new hypertensive patients

First drug to add in hypertensive patients already on medication

SUPPLIED: Singoserp *Tablets*, 1 mg. (white, scored); bottles of 100. Samples available on request. Write to CIBA, Box 277, Summit, N. J.

CIBA
SUMMIT, N. J.

2/2697HK